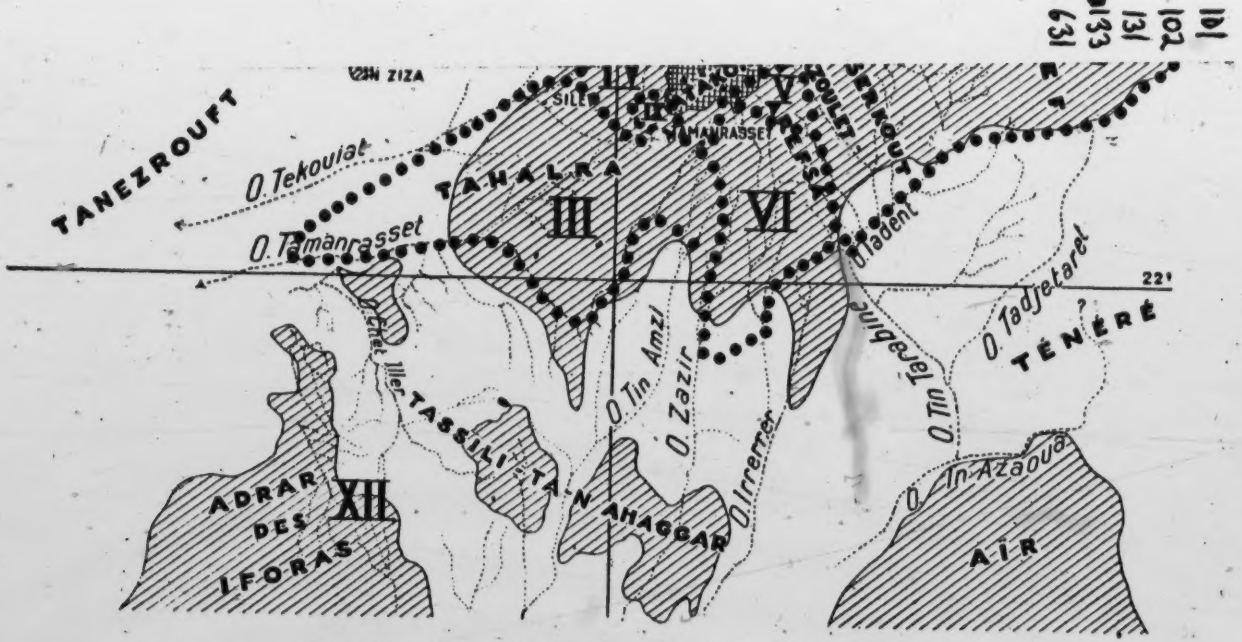
1: Lhote--41a E-5 (1929-1940) 1944 MS25 Tuareg MS25



Map IV. Areas of nomadization of Ahaggar tribes.

I. Issekkemâren.
S. f. Kel In-Rhar'
Kel Amgid
Kel Tâfedest
Kel Immîdir
Ihéiaoueâ-Hâda
Isselamaten
Kel I-n-Toûnîn
Kel Terourirt

II. Tâitok et Kel Ahnet

III. Ikechchemâden
Iklân-en-Taoussit
Tégéhé-n-Efis

IV. Dag-Râli
Ibettenâten
Irréguénaten

V. Kel Tazoûlet

VI. Agouh-en Tehlé

VII. Ait Loajen

VIII. Tégéhé-Mellet

IX. Ikadeien

X. Zone of salt marshes open to all tribes, but owned by the Amenokal.

XI. Ajjer Tuareg

XII. Zone of exceptional nomadization of the Ibettenâten, Irreguenaten, Ikadeien, and Kel Ahnet.

Scale: 1/5, 000, 000.

114 533 631 forming the tobol" and, by extension, "servant of the tobol."

At the present time these three fractions number about 150 people.

[162] We call attention to them here only as a reminder.

Book V

Material Life

Chapter 1

Living Conditions Among the Ahaggar Tuareg

●133 The Ahaggar, as we have already said, is a mountain refuge. We do not know why the Tuareg have continued to live there when they could have found much better countries to the south where they could have had a much easier life. Perhaps we should attribute this to attachment to the country or, quite simply, to an ancient state of things which forced them to take refuge against their will in the middle of the rocks.

13 [511] [312] A superficial examination shows that the Ahaggar is a very poor country with negligible resources, which imposes a living standard lower than the average. The pasture reserves are calculated, as are the water reserves. The subsoil possesses nothing, or almost nothing, which is marketable, except a little salt. Consequently, the possibilities for life there are quite limited. For the inhabitants to live, then, they must have recourse to outside resources.

1: Lhote--74a E-5 (1929-1940) 1944 MS25 Tuareg MS25

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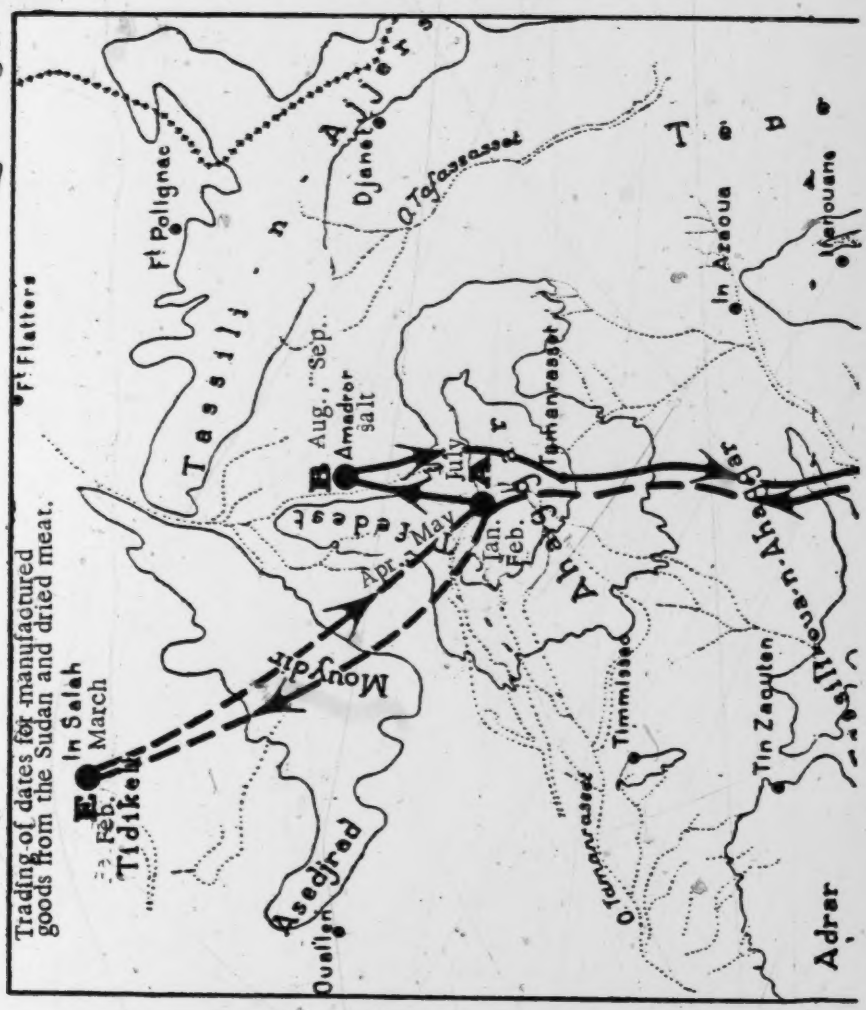

Map V. Diagram of the caravan cycle of the Ahaggar Tuareg.

A. Center of transhumance and point of departure of the caravan cycle. B. Center of salt extraction. C. Region of stocking of salt and of temporary nomadization. D^1 D^2 D^3. Center of trade of salt for grain.

1: Lhote--74b E-5 (1929-1940) 1944 MS25 Tuareg MS25

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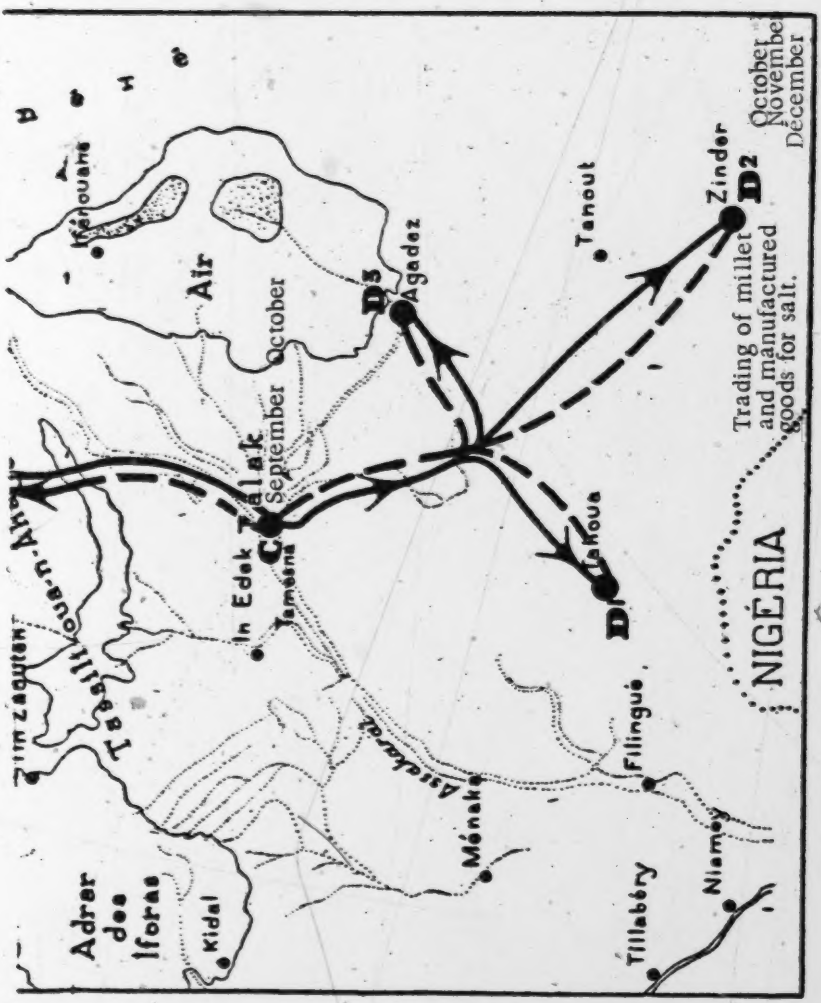

E. Center of trade of manufactured goods and dried meat for dates after return from A.

177 In the last few years a number of notables, including the
492 aménokal, travel on horseback, but only when they travel in the
643 Lower Ahaggar which is furrowed by wide valleys, allowing them
133 to avoid rocks.

101 The Ihaggaren never travel on zebus and never use them for
492 transportation. In the Sudan, however, this animal is used as a saddle animal and a beast of burden.

/321/

Chapter 2

War and Raiding

721 The Tuareg distinguish two kinds of warring expeditions: war declared between fractions or peoples, which they call annemensi or amdjer; and raids, edjen or egen, which aim to pillage a camp or a herd by surprise.

Although war was rather rare, raids were, on the contrary, quite frequent. They were caused by the atavistic taste of the Tuareg for this sort of expedition. For the occasion they gathered together the most disparate elements, all moved by the same spirit of adventure and battle.

182 When an expedition against a camp was decided upon, those
221 present tried to gather the suitable number of men. They were
361 most frequent in summer, for, since the camps were forced to
721 spread out in the pastures, it was easier to surprise them.

War, on the other hand, was waged in winter, when the caravans had returned and the provisions necessary for the life of the tribe had been assured for the long months; this relieved the warriors of any material preoccupation about the lot of their families.

727 Each man had to procure arms for himself, and if he did not
426 own his own mehari, he found someone to lend him one; in case
714

2: Briggs E-4, 5 (ca. 1956) 1958 MS25 Tuareg MS25
Hoggar

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A Targui noble of the Ahaggar, beside his tent. (Photograph by L. C. Briggs.)

[Frontispiece]

2: Briggs E-4, 5 (ca. 1956) 1958 MS25 Tuareg MS25
Hoggar

[P. 221]

[Pp. 167-220 not processed]

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b

Fig. 6. Sandy desert and stony desert. *a*, The Great Western Erg. *b*, A camel trail in the Ahaggar. (Photographs courtesy of OFALAC, Algiers.)

[photo a not processed-Analyst]

2: Briggs E-4, 5 (ca. 1956) 1958 MS25 Tuareg MS25
Hoggar

[P. 228]

[Pp. 222-227 not processed].

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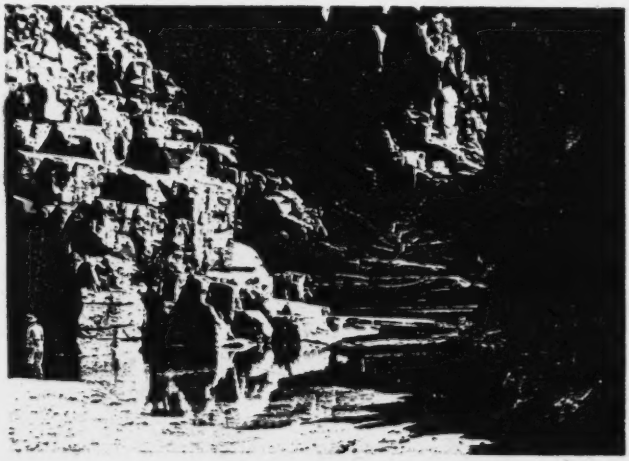

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Fig. 11. Waterholes in the Ahaggar. (Photographs by A. J. Weber.)

2: Briggs E-4, 5 (ca. 1956) 1958 MS25 Tuareg MS25
Hoggar
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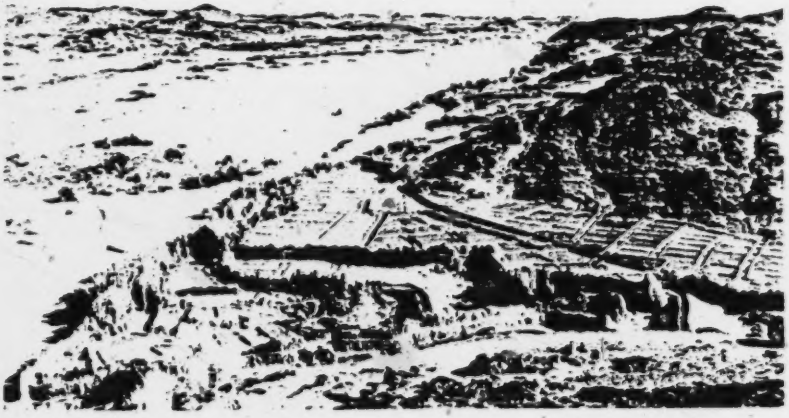

Fig. 14. Gardens at In Amguel, in the Ahaggar (80 odd miles north of Tamanrasset). Here we see the typical disposition of gardens in the agricultural centers of the central Sahara. A checkerboard of square garden plots, separated and at the same time connected by little irrigation ditches, is located just above the dry bed of an occasionally torrential stream, and just below the village, which is perched high enough above it to be safe from freshets and flash floods. (Photograph by Chasseloup-Laubat, courtesy of the *Musée de l'Homme*.)

[361]

2: Briggs E-4, 5 (ca. 1956) 1958 MS25 Tuareg MS25
Hoggar
[P. 235]
[Pp. 230-234 not processed]

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Fig. 20. a, Bey ag Akhamouk, heir apparent (and now paramount chief) of the Ahaggar Tuareg, with one of the last horses of the central Sahara.

2: Briggs E-4, 5 (ca. 1956) 1958 MS25 Tuareg MS25
Hoggar
[P. 251]
[Pp. 243-250 not processed]

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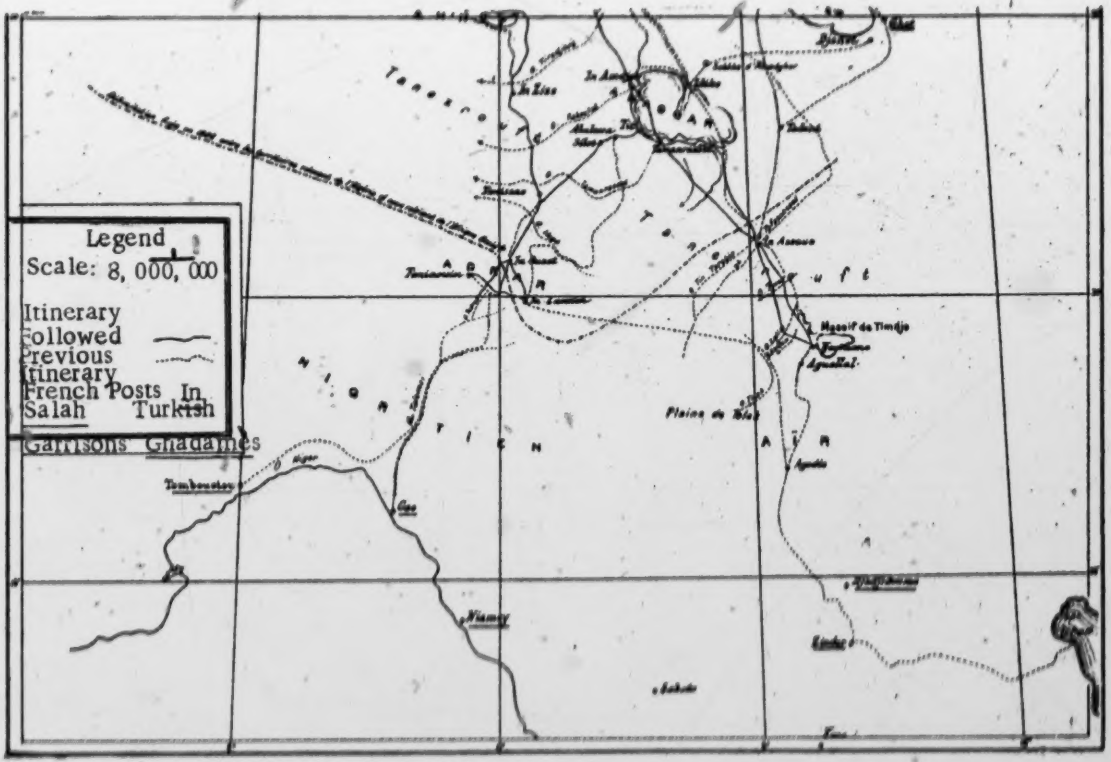
b

Fig. 36. *a*, A typical camp site and tent of the Ahaggar Tuareg. *b*, A chief of the Ahaggar Tuareg sits before his tent, camel whip in hand and surrounded by his family. (Photographs by Chamioux-Lanbat, courtesy of the *Musée de l'Homme*.)

4: Benhazera--iii G-5(1905) 1908 MS25 Tuareg MS25
Hoggar



Lithographic printer, A. Jourdan, Algiers

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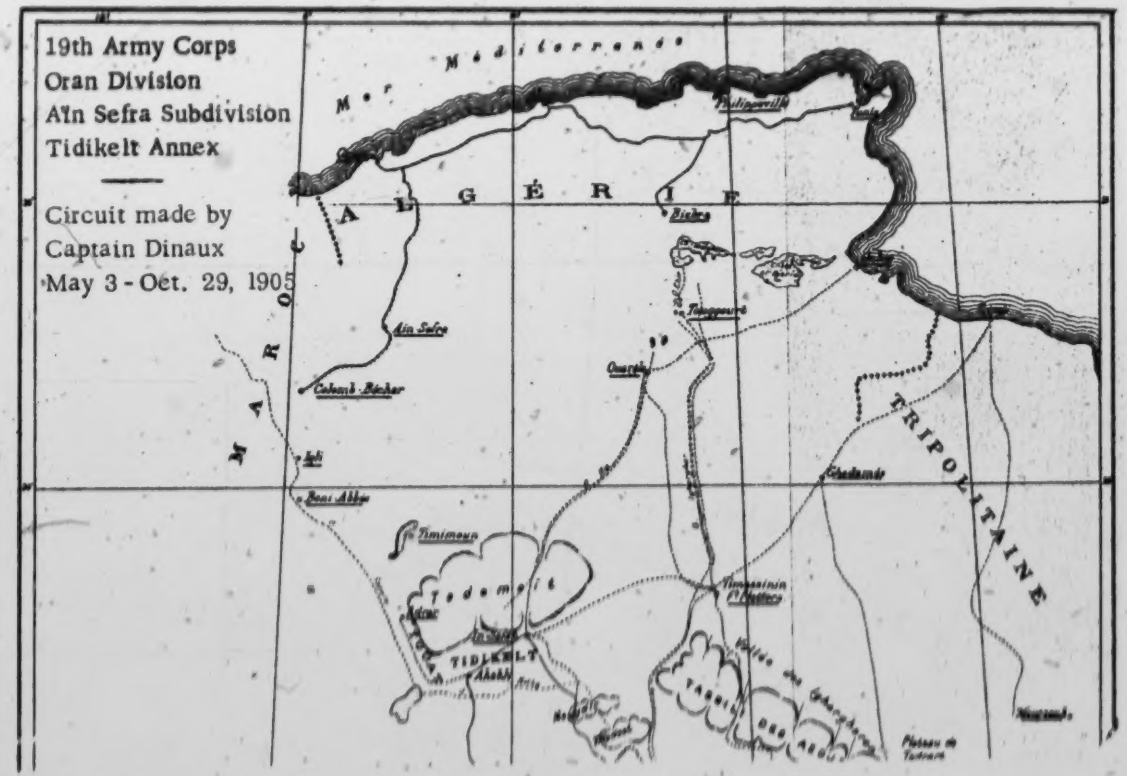
4: Benhazera--iv G-5 (1925) 1908 MS25 Tuareg MS25
Hoggar



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4: Benhazera--27 G-5(1905) 1908 MS25 Tuareg MS25
Hoggar

The laws of hospitality, "amedjarou," are observed as 574
among all Moslems. The guest, "amadjar," is always well
received.

Chapter XVI

Hygiene. Diseases

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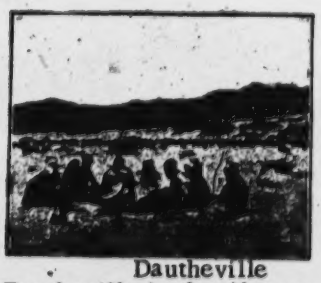

Dautheville

Dr. Dautheville in the Abezzou
Wadi (White Tifedest)

We know that the Tuareg have a horror of water. They do 515
not wash themselves on the pretext that this would make them
sick, but it is essentially because they are very sensitive to [151]
cold. To say their prayers, they do not indulge in the pre- [782
scribed ablutions, even when they are at home and have water 788]
at their disposal. They are content with "ta'moum" (an
imitation of washing with sand), which they call "ettamine."
The amenokal Moussa ag /31/ Amastane is the only Tuareg
whom I have seen making his ablutions with water.

This is also doubtless due to the fact that the Tuareg like 241
to keep the tint of indigo, "sedjeni" ⵜⵉⵏⴷ , on their 302
skins, the result of wearing "chegga," or blue cotton, which 386
runs a great deal and of which they make their clothes. They 515

4: Benhazera--57a G-5(1905) 1908 MS25 Tuareg MS25
Hoggar

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In-Tekoufi Wadi (Tifedest)

and shields; mehari saddles, saddlebags in all shapes of carved and colored leather, little leather boxes, glossy blue cloth, "ilechchane," gandurahs with sleeves, black cloth ("kehal") for veils, and finally "tikamarine," or dry cheeses. In the Aïr saddles for horses are made, shaped like Mexican saddles and having round stirrups of heavy copper covered with leopard-skin (the Amenokal Moussa ag Amastane has one). 439

To the Aïr, and sometimes to the Damergou, they bring salt taken from the sebka of Amadr'or, "chegga bought in the Tidikelt, camels, donkeys, dates bought in the Tidikelt, "teheredjlé" (Hartemisia herbalba, Composeae), etc.

[133]

Crater of the
Ouksem Volcano

3. Adhar and Niger, from which they get bechna, rice, sheep, and camels. They bring in salt, "chegga," and dates.

4. Ghat and Ghadames, but seldom. There they buy extra fine burnooses, sabers, sugar, tea, and "chegga." They bring in camels, waterskins, camel-hair ropes, and sheep. /69/

In addition, the people of the Tidikelt, especially the Ahï-Azzi, come to buy wheat and barley on the spot, which they gather into their "ar'erems."

The Tuareg of the Ahaggar would like very much to have, like the Azdjer, the protection of the big caravans which go from Tripoli to Ghat, to the Aïr, and to the Sudan. Thus they would hire out their camels to traders, and this would be an important source of revenue for them (the Aï-Loaïn already hire out their camels toGhat traders). They would very much like to see this current turned toward the Ahaggar, and we have the greatest interest in urging them on this course. 439 484 427

5: Nicolaisen E-4, 5 (1951-1955) 1959
MS25 Tuareg MS25

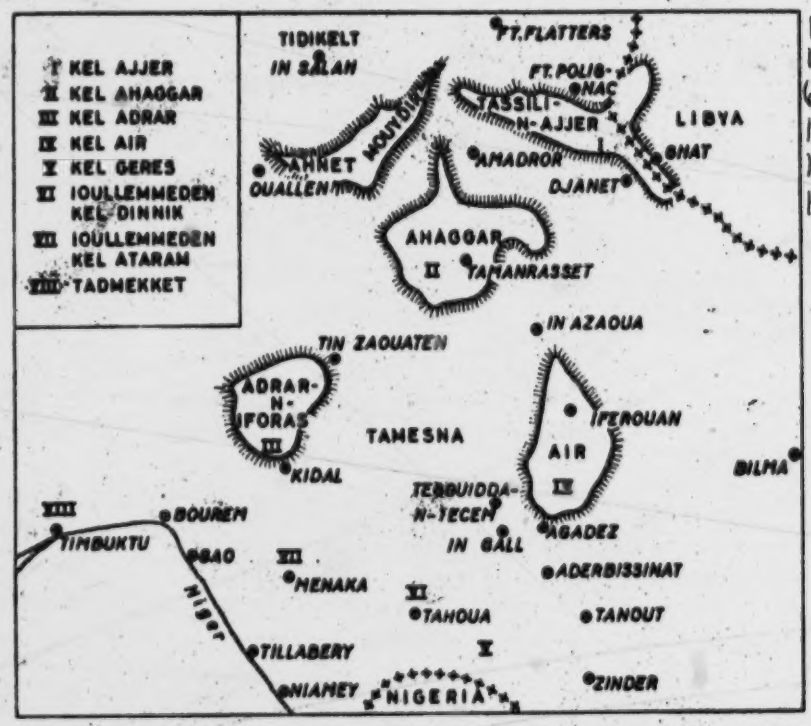

Fig. 1.–Map of the central parts of the Western Sahara and the adjacent Sudanese zone inhabited by the Tuareg, who fall into eight major political groups or federations. These groups as mentioned in the text are sub-divided into the politically very important drum-groups. The geographical position of the eight groups is roughly indicated by Roman numerals. – The Tadmekket Tuareg (VIII) from about A.D. 1800 were subjected to the Ioullemmeden Kel Ataram (VII) (cf. Richer 1924, p. 96). Scale, 1 centimetre = 160 kilometres.

those surviving, although emaciated, will quickly recover as soon as the rainfall starts again. In addition it is often very difficult to take goats through the barren desert country south of Ahaggar without severe loss. With camels, which are also very important domestic animals, things are different. Camels make a great demand on fodder, they are very valuable, can be sold for rather high prices in the oases, and they have a very slow increment compared with goats. For these reasons it is necessary or desirable to keep herds of camels in the south when pastures are dry in Ahaggar, and camels can be taken through the barren desert country without much difficulty. In dry years many Ahaggar Tuareg have their camel-herds in Tamesna, about 300 kilometres from the camps in Ahaggar, and there are even nomads who keep their she-camels constantly in these regions, where the animals are guarded by herdsmen who are frequently slaves.

5: Nicolaisen E-4, 5 (1951-1955) 1959
MS25 Tuareg MS25
Ahaggar
Air

During drought periods the uttermost poverty is the lot of the Ahaggar Tuareg, who must then rely almost exclusively on agricultural products for their nourishment. But in years of abundant rainfall they have much milk during the winter, and they make butter and cheese to be used during the hot season when milk even in good years is scarce. They then also have meat for their sustenance but this is less important than milk-food.

In good years the perennial plants do not form the most important fodder of the domestic animals. For heavy rainfall will as if by magic change the barren country outside the valleys. An extremely rich vegetation of annual grasses and herbs springs up, and these tender plants constitute the very best fodder. But as, owing to the irregularity of the rainfall, annual pastures will not appear every year, it is difficult to breed other animals than goats and camels to which can be added donkeys used exclusively as beasts of burden and for riding. It is true that most Ahaggar Tuareg have a few sheep but none of them have cows (zebus). Cow-breeding and also effective sheep-breeding cannot be practised in a country like Ahaggar where for a period of years there may be no pastures of annual plants. In dry years the thorny acacias form the most important fodder of camels and goats, but the leaves of these trees cannot be eaten by cows and only with great difficulty by sheep.

In Ahaggar rain may fall at most seasons as the country is situated on the frontier of two different rainfall belts, namely that of the Mediterranean where rain occurs mainly in winter, and that of the Sudan where rain will fall late in summer. For a long period of years rain has fallen most abundantly late in summer, but according to Dubiéf this has not always been so. Not many years ago rainfall was almost equally common at all seasons (Dubiéf 1947, p. 7–23), and Ahaggar still has the characteristics of two distinct climatic zones, likewise as botanically it belongs both to the Mediterranean and to the Sudan.

On my camel journey from Ahaggar to Air via the wells of In Ebeggi and In Azaoua in April 1955 I experienced a rapid change of climatical and botanical conditions. At the outskirts of the southern slopes of the Ahaggar Mountains a persistent vegetation is very scarce in the valleys, and between the two above-mentioned wells there are practically no permanent plants. Broadly speaking the desert region between Ahaggar and Air is nothing but plains of gravel and stone interspersed with rocks and hills. But a little scattered rain will occur even in these regions and gives rise to annual pastures which are utilized by passing caravans. Otherwise the country is uninhabitable.

In the northernmost part of the Air massif acacias and tufts of perennial grasses grow in most valleys as in the lower parts of the Ahaggar Mountains. But compared with Ahaggar permanent vegetation is very rich and in places forms almost impenetrable jungles of trees and brushwood. Further south in Air perenniel plants including trees are very common also outside the valleys, and the country south of the massif very rapidly changes into a kind of steppe or open savannah. The com-

5: Nicolaisen E-4, 5 (1951-1955) 1959
MS25 Tuareg MS25
Air
Ahaggar

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Fig. 12.–Tuareg skin tent in a river valley of the Ahaggar Mountains. The sheet of skin sewn together is placed over three parallel pairs of posts each pair being connected with a horizontal crossbar. The middle pair is higher than the outer pairs. It may be substituted with two equally high pairs of posts with crossbars, or with two arches. Tuareg skin tents have mats to be drawn round the tent under the sheet of skin, and in winter the Ahaggar Tuareg frequently erect stone walls for protection against cold winds, as shown on this photograph.

184
342 Hourst 1898, p.105ff., 133. – Gabus 1945, p. 361. – Chudeau 1909, pl. XXXII–XXXIII p. 218. – Le Coeur 1937, p. 42f. – Urvoy 1942, p. 33f., pl. I).

[171]
342 Mat-covered arched huts or tents are found only among the Southern Tuareg, and as such dwellings are found among many of their Sudanese neighbours it might seem natural to consider them foreign to traditional Tuareg culture. However, the arched mat-covered tent of the Tuareg seems to be constructionally distinct from other barrel-vaulted dwellings. It consists of one to three wooden arches placed parallel to and between a pair of two or three short sticks supporting a horizontal crossbar. A number of very slender curved sticks cover the upper part of this construction. They are fastened to the arches and to the horizontal crossbars (cf. fig. 13). An arched hut of the same type, although more elaborate and solid, is found in certain Kel Owi villages (fig. 13,) as already mentioned p. 77, while the use of crossbars is apparently unknown to other peoples who have barrel-vaulted huts (*The Songai:* – Barth 1857–58, V, p. 160, 163, 165f. – Dubois 1897, p. 232f.;

171
342 1911, p. 33. – Gabus 1948, p. 10. – Olufsen 1928, p. 137. – Prost 1954, p. 184ff. – Urvoy 1942, pl. II, 3. – Aymard 1911, p. 144 pl. 25; 1908, p. 183. – *The Fulani and*

133 /12 cont./ Beyond any doubt the country was destined to fire the imagination. This mass of mountains, rising below the northern Sahara, appears closed and hostile.

The deep gorges which traverse the tassilis /mountains/ are the doors to a region that seems to isolate itself from the world.

Leaving these somber gorges, one enters a domain of stone. Rocks are encountered in the strangest forms imaginable; there are immense domes of granite surging from a sand plain, or monoliths standing like a forest of dolmens; there are curious fissile schist formations, which seem like the leaves of some monstrous book. This landscape continues over hundreds of kilometers, unveiling a desert nature which adorns itself with the most extraordinary rock forms.

But the strangest is yet to be seen, the heart of the country: each valley there is an enigma; the volcanic crags which border the ravines seem to menace the intruder who dares to violate this domain.

The soil shows hues going from a delicate yellow to black, streaked with violet, green, blue, or pink veins. Jagged and smooth boulders pile up in indescribable chaos, and immense stretches of black and swollen stones seem to come from some devil's caldron.

114 The inhabitants once seemed to be as mysterious as the country which sheltered them. Their tall stature, their proud and disdainful bearing, and their faces veiled by the blue taguelmoust /veil/ were so many factors to stimulate the imagination. Stories circulated throughout the Sahara vaunting the warrior virtues of the Tuareg, their courage, their cruelty joined to a /13/ chivalrous sense of honor. They were, for some, the last of the Atlantes, for others, ancient Francs, whose sword in the form of a cross symbolized the lost faith.

However, little by little, explorers, administrative officers, scholars were to bring things into focus and to show the Ahaggar as it really is.

114 /13 cont./ The first clarification in the general knowledge of the region came from the reports of Barth and Duveyrier. Then followed the scientific works of Flamand, Maire, Reygasse, Kilian, Monod, Lelubre, Bordet, Follot, Dubief -- who laid the solid foundations for as exact a knowledge as possible of the country and its people.

The linguistic work of Father Foucauld portrayed in remarkable fashion the Tuareg and their language at the time he knew them.

Many explorers, notably M. Lhote, have left precise observations joined to personal impressions of the country.

Finally, the novel has spotlighted the Ahaggar, and for many of the French, L'Atlantide, that delightful fabrication by Pierre Benoît, furnishes the picture they have of the country. The last books of Frison-Roche also deserve a great deal of credit for the tourist movement which has begun to the Ahaggar.

Morphology and Relief

133 The mountain system which constitutes the Ahaggar seems, at first view, to lack coherence as an entity; its form is better seen upon closer examination. In order to have a schematic idea of the system, one can divide it into three large concentric zones: a central core, a peripheral trench, and the outside belt of tassilis.

In the center of the Ahaggar is an almost circular massif, a sort of plateau with an average altitude of 2, 000 meters, spiked with peaks reaching nearly 3, 000 meters: this is known to the Tuareg as the Atakor (skullcap). A rocky spur projects toward the north: this is the Tefedest, which reaches /15/ 2, 327 meters with the Garet el Djenoun at its northern extremity.

Around the central core, a sort of circular depression, varying in altitude from 500 to 800 meters, forms an almost perfect crown in which rise, here and there, granite crags of volcanic remains.

•133 /14/

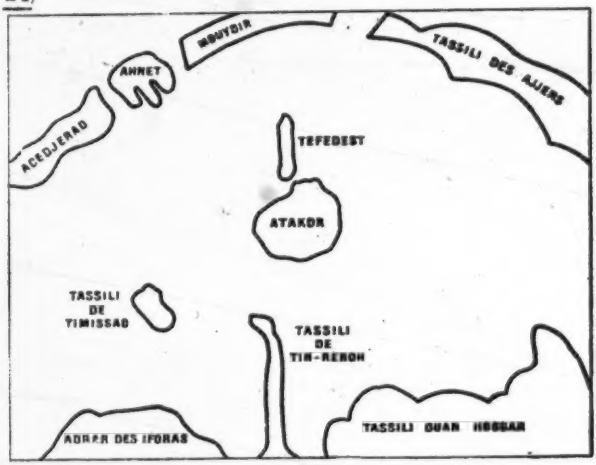
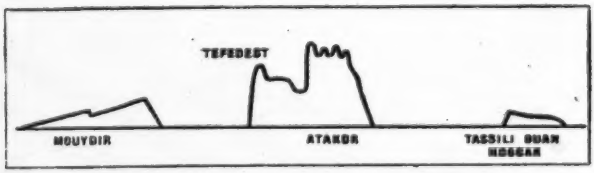


Diagram showing the concentric morphology of the Ahaggar.



North-south diagram of the Tuareg mountain system.

• 133 /15 cont./ Then around the central crystalline massif at an average distance of 200 kilometers is found a nearly continuous ring of plateaus, which form the outer belt of the Ahaggar. To the north is the Mouydir, then, going clockwise, comes the Tassili des Adjjer /Tassili des Ajjers/ to the east, the Tassili n'Ahaggar /Tassili du Hoggar/ to the southeast, the Tassili de Tin-Reroh to the south, the Tassili de Timissao to the southwest, and, to the northwest, the Acedjerad and the Ahnet, the latter of which borders the Mouydir.

The beds of just a few large quaternary wadis breach this ring of tassilis; they drain nearly all the waters of the Ahaggar. The Tamanrasset wadi disappears in a vast drainage basin north of the Adrar des Iforas; formerly, it must have joined the Niger at the Taoudeni basin. The Tafassasset wadi, which drains the eastern flank of the Ahaggar, now loses itself in the Ténéré; it must have been at one time a tributary of Lake Chad and not, as long believed, of the Niger. The Igharghar leaves the Ahaggar between the Mouydir and the Tassili des Adjjer; its course has been traced as far as the foot of the Aurès.

The Tin-Tarabin wadi drains the waters of the eastern slope of the Atakor.

The Ahaggar as a whole may be compared to an immense system of fortifications. The central massif would be the inner fort bristling with towers and falling off steeply to the surrounding moat. The tassilis, also with a sheer face toward the moat but sloping gently toward the exterior, would be the peripheral glacis. A north-south cross section brings out this defensive aspect of the Ahaggar.

The central core that the Tuareg call the Atakor (some translate this term by "middle of the mountains," others by "knot" where all the wadis originate) presents a /16/ gripping appearance of wild grandeur. It is a landscape bristling with vertical peaks about 3,000 meters in altitude, of which the Ilamane (2,823 meters) is typical. These are ancient volcanoes. They are thought to have thrown up a very viscous lava, which

133 /16 cont./ solidified almost immediately, a little like tooth-paste leaving the tube when it is slightly squeezed. The usual volcanic cone is very restricted; the attention is drawn only by the vertical or spiral columns constituting the peaks.

Sometimes immense tabular mountains, such as the Adrar In Taraf'n or the Adriane, bear witness to the volume of the volcanic flows, and their different planes seem to indicate the contour lines.

One also sees, towering over the immense plateaus covered with lava, veritable fortresses of stone that give the most curious effect in twilight; the Aounahampt, the Akarakar, and the Takouft are the most characteristic of this type. This is the domain of wild sheep.

The Tuareg were impressed by this strange relief. The Ilamane, so pure andmajestic, rising in state, facing south in the middle of an amphitheater of splendidly hued mountains, might have been, in their legends, a god whose praises were sung by the granite organs all around it. But this warrior people, little concerned with religious subjects, imagined a love story which caused a quarrel.

133 Several kilometers west of the Ilamane are two mountains;
773 the northernmost one, massive in form, is named Amdjer -- which, the legend says, was a man; the other, with a pointed summit, is named Tararat -- and Tararat was a woman.

Amdjer and Tararat loved each other. It came about that Ilamane also fell in love with Tararat. This passion was not, of course, well received by Amdjer, who reproached Ilamane. The latter, very violent by nature, struck Amdjer with his spear. Amdjer defended himself vigorously, fetching his attacker two mighty saber blows which completely convinced Ilamane that he shouldn't dispute Tararat with such a rival.... Since that time Amdjer and Tararat have been /17/ united by a chain, and the spear thrust which wounded the mountain is still visible; a spring flows from it as evidence that the wound has not yet healed. Ilamane, on each side of his summit, proudly bears the

133 /17 cont./ two gashes from the saber blows, a souvenir from
773 his youth of a duel of giants.

Some time after that incident, the peace of the Ahaggar was again disturbed. Ilamane fell in love with Tahat, who was a woman, but there was another suitor named Ti Hiyène. Fearing this rival and wiser by experience, Ilamane left the place where he had always been and settled down very close to Tahat, where he has remained ever since. Vexed at feeling himself scorned by Tahat, Ti Hiyène resolved to flee from the Ahaggar and go seek his fortune toward the Adrar des Iforas. He then left, going by way of the Amded wadi. Now, in the Amded wadi there was a mountain named Eheri. Eheri was brave, though peaceable. He respected the customs, and it did not seem proper to him that a mountain of the Ahaggar should thus leave his country for what was, all in all, a rather trifling reason. He left his place and planted himself squarely in the path of the runaway in order to bar the way. Ti Hiyène, informed of Eheri's gesture, doubtless learned his lesson, for he settled upstream, near the well of Tin-Dahar.

Since that time one may admire the Ilamane, fortunate conqueror, rising in state before the Tahat, and one may see his first site in the form of an immense circular crater which forms a depression to the west of the Ilamane wadi. Near the Amded wadi, a similar crater marks the former residence of Eheri. These circular depressions have long been enigmas to geologists.

"And the location of Ti Hiyène?" I asked Marly ag Amayas, who related this legend to me in detail. "Nobody knows it," he answered, "and this is understandable: when a man decides to leave after thinking it over, he moves quietly, thinking of his plans, and leaves no trace, while he who acts from sudden passion goes abruptly and leaves a deep mark on the ground."

133 A network of wadis separates these different summits, forming /18/ drops of from 800 to 1,000 meters. The upper valleys of these wadis are young and have a V form, true canyons out through the lava fields (Tarhoumout wadi). None of these wadis

●133 /18 cont,/ has finished cutting its bed; they have rapids and sometimes waterfalls where they cut a passage between two Adrars. At these spots, the water stands in permanent pools called gueltas. Certain of these gueltas (Issakarassène, Afilal) contain fish and are surrounded by luxuriant vegetation that contrasts sharply with the aridity of the country.

This region of the Atakor strongly impresses the traveler with the unbelievable hues taken on by the mountains during the course of the day. The wild majesty of the mountains calls up an anxiety hard to dismiss when one is traveling along acacia-lined wadis, guided by a veiled Targui, silent and supple, mounted on a camel whose padded tread blends with the uneasy silence. The zone of the peripheral trench, in which the relief is not very marked, has large regions which are nearly flat and which are often covered with a thin layer of sand. Sometimes small massifs cut the horizon, or, to the side exposed to the prevailing winds, a dune looms up: the Adrar Bourzekal is an example of this. Sometimes granite hills in the form of perfect domes, polished, shining, and mellowed, seem to surge from the horizontal sweep (Tesnou, Iniker, Ahélégeg), or there may be a colossal accumulation of glittering blocks and of nearly geometric forms, which give an appearance of ruins to these garas /flat-topped buttes left through erosion/ 60 to 100 meters high, as at In-Tédéini, or near Ideles, or in the region of the Debna.

In this zone the wadis coming from the Atakor spread out to such an extent that one can no longer distinguish any definite valley: it is more accurate to speak of distribution basins in which the water brought down by rather powerful floods meanders along in no fixed pattern. The passage of the water is sometimes marked by dry grasses and some rare [137] tahlas /Acacia tortilis/. One again finds a valley where the wadi breaches a rocky barrier by cutting a straight groove through it, and beyond there is another basin. The basins become larger and larger as the distance from the Atakor

133 /18 cont./ increases, for /19/ the tributary basins converge and form an immense flat plain called aciaf by the Tuareg.

Seen from afar the tassilis appear to be impassable barriers whose tops, eaten by water erosion and battered by wind, give the illusion of a fortified city. Eroding wadis have cut through these sandstone plateaus, and their deep valleys with vertical sides constitute savage gorges at the bottom of which a relatively dense vegetation contrasts with the aridity of the plateau, which is wholly bare and raked by the winds. Numerous gueltas, often fringed with tahlis (a kind of reed), are found in these tassilis.

[103] Note. -- A few altitudes:

Tahat	3, 003 meters	In the Atakor
Ilaman	2, 823 "	" " "
In-Taraïn	2, 762 "	" " "
Asekrem	2, 804 "	" " "
Tozat	2, 400 "	" " "
Akarakar	2, 216 "	" " "
In-Afilal	2, 157 "	" " "
Garet el Djenoun	2, 327 "	In the Tefedest
Ifetessen	1, 680 "	In the Mouydir

The Climate

132 Meteorological observations are regularly made only at Tamanrasset and only since 1929. There is a lack, therefore, of exact data for the whole territory. If it is known from Tuareg reports that it has rained in a certain place, the intensity of the precipitation is not known. The information concerning the winds and temperatures is still more vague. However, by taking into account the observations made at Tamanrasset and by examining the vegetation at different places in the Ahaggar annex, as well as the distribution of the fauna, one can distinguish three climatic zones, which correspond almost exactly

132 /22/ The elders of the camp, to whom the woman related
821 this adventure, said it was really the first time that the Kel es Souf had ever been agreeable.

Some time later the same woman, at the same place, saw a similar whirlwind. Hoping to be rewarded again by the genii, she saluted the whirlwind with gay "you-you" cries as it passed. She had cause to rue this; she was seized, swept from the ground, whirled to an unbelievable height, then abruptly let go to crash on the ground. As she fell, the Kel es Souf told her: "We are in the funeral procession of one of our kind; this is your punishment for mocking us." The woman was found with all her limbs broken. She told her story and died.

132 The climate of Tamanrasset, which at first seems agreeable because of the mild temperature, is enervating in the long run; this is agreed to by everyone who has lived there a certain length of time. Intellectual work is very tiring. Father de Foucauld tried to settle down at the top of the Asekrem, but found he couldn't work there as hard as he could elsewhere. The extreme nervousness that seizes men, and particularly women, after a long stay is also noticeable. What causes these troubles? Doubtless they are due to the combined effects of the altitude and the extreme dryness of the air. Some ascribe them to magnetic effects, and others blame radiations. (1) In point

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1. I once made a curious observation: two years ago I was collecting different rocks, which I tested with a Geiger counter. I marked on each rock the number of "clicks" per minute. One morning I wanted to test my samples. All my rocks were more radioactive by 25 "clicks." By chance, I was

132 /22 cont./ 133

able to report this anomaly to Father Bordet, a geologist come to study volcanism in the Ahaggar. He suggested cosmic radiations, but, not being a specialist in this field, he affirmed nothing, merely noting the information in order to pass it on to a qualified person.

132 of fact, no satisfactory answer has been found.

A second climatic zone is found in the peripheral trench. This region, situated at a lower altitude, has higher temperatures and much less rain. Vegetation is nearly nonexistent there; even in the wadis, the tahlas /see Appendix, Flora/ are not numerous and the morakba /Panicum turgidum/ is /23/ nearly always dry. The kranka no longer is found, nor is the éthel, /see appendix/, and the true Saharan climate reasserts itself, leading to the complete desert of the Tanezrouft and the Ténéré. The gazelles avoid the center of this region; they approach the more humid mountainous country according to the frequency of the rains which nourish acheb (pasturage).

Lastly, in the tassilis a distinction must be made between those in the north and those in the south.

The tassilis of the north receive winter rains nearly every year, and, more rarely, get precipitation coming from the Sudanese monsoon. Information on these regions is not plentiful and is inexact, except concerning the Mouydir, which is crossed by the route from In-Salah and flown over by airplanes from Algiers. It appears from reports of the Tuareg that the Mouydir receives more rain than the Ahnet and the Acedjerad, which seems reasonable because of its greater altitude, and perhaps also because of a system of atmospheric depressions which are suspected but which have not yet been studied.

132 /23 cont./ The kranka reappears, a sign of less aridity; the tahlas are fairly dense in the wadis; the gueltas /pools/ rarely dry up and are bordered with berdis /Formium tenax/. The wild sheep is a permanent resident of the summits.

There is still less information about the tassilis of the south. Facts are almost nonexistent for the Tassili n'Ahaggar. There is information given by the Tuareg about the Tassili de Tin-Reroh and the Tassili de Timissao, which are situated on caravan routes coming from the Adrar des Iforas toward the Tidikelt or the Ahaggar. They chiefly report summer rains, and rains abundant enough to engender acheb /pasturage/.

These tassilis receive little water from the "tornado tails" because of their medium altitude. However, it rains in the summer nearly every year. The wells of Tin-Reroh and Timissao are never dry. The Tin-Reroh guelts /pool/ sometimes is.

Although not a tassili, the northern border of the Adrar des Iforas has the same sort of climate. This section is of vital importance to the Tuareg of the Ahaggar, who /24/ graze their she-camels there. Summer rains occur regularly; the Sudanese monsoon causes periodic floods. The gueltas in the wadis fill up in the summer and may still have water when the next floods come. Gergir provides abundant pasturage; it lasts nearly all year. Ethel and tamarisk are dense in the wadis, and tahlas begin to grow on the hillsides. The flora of the wadis is more varied. Gazelles are plentiful; one sees Robert's does, oryx and addax antelopes. This is certainly the most favored region in the territory of the Ahaggar annex, but geographically it is already the Sudan.

Water in the Ahaggar

133 312 [132] As in every desert region, the question of water is of primary importance. The Ahaggar is relatively favored by rains. Water points are numerous in the mountainous regions of the

133 /24 cont./ central core and of the tassilis. From this point of
312 view, then, it is easy enough to travel through those regions. But it is an entirely different story for the zone between the Atakor and the tassilis.

Wherever there is water, the landscape in the Ahaggar is transformed; an intense animal life develops; around the water points grows vegetation that seems luxuriant in contrast with the rest of the country. This thin trace of life has something touching about it, something timid and intimate in comparison with the grandiose face of the desert.

As a result of the crystalline nature of the soil, there is no artesian water table. The only hope of finding water is in the wadi beds, under the alluvial deposits, at depths varying from .20 to 15 meters. Occasionally, when the water table under the wadi is abundant, it flows out freely at a rocky shelf which forms an underground dam; such an outflow is called tiggert in Tamashek. When after a tiggert water accumulates in rock basins and the "potholes" of the rapids, there are gueltas (aguelmam in Tamashek) in which live fish and an entire aquatic fauna. As far as I know, there are only rare /25/ springs in the Ahaggar: we may cite the Chapuis spring near Tamanrasset, which flows from the granites of the Adrar Haggarène. Limestone deposits in certain wadis of the Tahalra permit the supposition that thermal springs may have existed formerly.

Nearly all the wadis originate in the central Ahaggar, the zone where the water is distributed. Two very large quaternary wadis, the Igharghar wadi and the Tamanrasset wadi, drain the waters of the west and north. The Tin-Tarabin wadi and the Tin-Amzi and Zazir wadis take the waters from the south and southeast slopes toward the Tamesnar, in the Azaouak wadi, a tributary of the Niger.

The Ahaggar wadis appear as a succession of basins descending from the summits like a giant staircase whose upper steps receive the water which sustains the only permanent vegetation of the country and which permits man to exercise his ingenuity

133 /25 cont./ in creating gardens. The lower steps, which spread out enormously, are dead to all sedentary life.

312 The Tamanrasset wadi affords a typical example of the Ahaggar wadi. Its source -- or more exactly, its head -- is at the Asekrem, nearly 2, 765 meters high; its mouth, that is to say, the last drainage basin, spreads out and loses itself in the Tanezrouft, at an altitude of 400 meters. Its present length is approximately 750 kilometers; if, in the quaternary period, the Tamanrasset wadi emptied into the Taoudéni depression, it must have measured more than 1, 400 kilometers. The descent in the upper part of its course is very steep, for at Amsel, 160 kilometers from its origin, the altitude has already dropped to 900 meters.

From its source down to Amselka, or about 200 kilometers, one may say that the Tamanrasset wadi is living: it has a distinct valley, the passage of the water is clearly marked; one sees terraces with clear-cut borders, and the valley is often cut in V shape. However, certain basins, such as the one at Tamanrasset (the village) give a preview of the large drainage zones downstream, evidence of a former, more humid epoch.

/26/ The description of this part of the wadi is merely an enumeration of the transversal valleys it cuts across; each of these has a corresponding rock shelf which is at the end of each basin.

In following the descent south of the Asekrem, one goes along a drainage trough which, after a kilometer, has already cut a ravine with sharply vertical sides from four to five meters high. The course then spreads out very wide, then comes a 20-meter fall into a basalt corrie with vertical columns reposing on the alluvial deposits; the valley continues, forming a canyon 60 meters wide and 30 meters deep. At this point the wadi takes the name "Tarhoumout"; it crosses a transversal valley after Mount Oul, the rocky shelf crops out, and abankor /water holes/ are dug here.

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/26 cont./ The wadi runs toward the south, then turns eastward; there is then a series of rapids in a gorge where the permanent gueltas of Lundien are found. Then there is a new bend to the south, the valley runs along the Akarakar, narrows, and there is a new rock shelf and the guelta of Ifelouen.

The wadi leaves the Atakor in cutting a passage between the Isekram and the Ahounahampt. It empties into the site of Tamanrasset, where it widens, takes its final name, and receives its first important tributary, the Irharhar Tekecherouet, in which are found the "grand gueltas."

By the Iharen peak the rock is grooved in a corridor 15 meters deep and one or two meters wide for about 200 meters distance. Afterward the wadi is 400 meters wide. Foggaras /subterranean channels dug to tap underground water/ are dug in its bed; they irrigate the gardens of Hadriane and Tamanrasset, and of Tihegouine, a small agricultural center a kilometer downstream from Tamanrasset.

The valley soon widens but remains hemmed in, then narrows again at Tagrambait, where a garden nourished by a foggara is found a little before an outcropping of rock. The valley then widens once more and reaches 600 meters across.

From this point on the wadi is always very wide, but it is dead. It runs toward the south, then, at the slight narrowing at Timguiaouine, it turns sharply toward the northwest. This may be a case of a former capture.

/27/ The valley becomes immense, the rock shelves are no longer perceptible; former water reaches are suspected where the wadi passes between two hills, but the course has the appearance of an absolutely flat and sterile reg, except toward the middle, where the presence of a few tufts of dried afazzou /Panicum turgidum/ shows that a modest trickle of water sometimes reaches this zone. Near a gara /butte/ encircled by pre-Islamic tombs, the Adjelman wadi meets the Tamanrasset wadi, but its waters cannot pass through because a barrier of dunes blocks its mouth. The Adjelman, which is four kilometers wide

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/27 cont./ at this place, will have a closed basin from now on. One cannot imagine a flood powerful enough to sweep away the sand-dune system which plugs the confluent.

Up to the Tassili de Timissao, the wadi appears to stretch out as far as eye can reach; it may be from 20 to 30 kilometers wide. It is a magnificent reg over which vehicles drive as if on a highway.

A few tahlas dot the course toward the center of the valley; dry stalks of gergir bear witness to a more humid time of long ago.

The confluent wadi Amded is obstructed by a large dune system; here again is a case of a large tributary having an independent basin, and its waters can no longer pass the sandy barrier which blocks their access to the Tamanrasset wadi. However, the Amded has vegetation up to its mouth during a wet year, such as 1950; at the very end of its course I have seen tufts of "had" and a few green tufts of morakba.

I have not personally followed the Tamanrasset wadi beyond Timissao; I have only the information supplied by the Tuareg, chiefly by the Kel-Ahnet.

The Ilafer wadi empties into the Tamanrasset wadi. Their junction forms an outsized flat, an immense sebkha, the final outlet for waters from such a flood as would be inconceivable in the Ahaggar at this time. Up until this point the course of the Tamanrasset wadi has been unobstructed, but, a little east of one degree longitude, it comes up against the Egtelis Erg. This is the present end of the wadi.

I have not been able to obtain any information about the extreme downstream course; it would require painstaking surveys to mark /28/ the ancient quaternary course, which is thought to have gone toward Taoudéni.

The flow of the wadi depends on the rains in the central Ahaggar, which is to say that it is extremely irregular. When, by chance, its upper tributaries -- including the Ajemet wadi -- are flowing, the water may reach to the low flats as far as

133 /28 cont./ Timissao, or so the Tuareg tell me, although I have never been able to determine when such a phenomenon last occurred. In 1948, I witnessed a flood; ten millimeters of rain fell in twelve minutes at Tamanrasset, but it was impossible to tell how hard and how long it rained in the mountains; four hours after the rain, the waters arrived like a rising tide, pushing the light detritus and, in effect, cleaning the wadi. At the end of a quarter of an hour, the water in the wadi measured 200 meters across; one could still cross the current with the water halfway up the thighs, leaning sharply to counteract the force of it, and a number of little pebbles could be felt pelting the legs. The flood lasted five hours. It reached only to Amsel, and only the tributaries above Tagrambalt were flowing. This flood, which, seen from Tamanrasset, appeared so considerable, resulted in only a slight infiltration of water, for the underground water level had only an insignificant rise.

Other than in the system of living and dead wadis, of which the Tamanrasset is only one example, water is found fairly deep under ground in the tassilis and close to them, due, no doubt, to the permeability of the sandstone.

312 Men may, then, obtain water for their use in several ways. The Tuareg know how to find, near the rock shelves and upstream of them, the place to dig down from 20 to 50 centimeters with a menassa /copper basin/ until the water seeps out: this type of water point is called an "abankor." The true well, the large one found along the caravan trails, is called "anou" (plural: "ounan").

The presence of these large wells is signaled from very far away by large redjems on the hills. Many paths seem to converge on a mysterious point; the nearer one approaches, the denser becomes the network of paths; then appears /29/ a vast trampled circle, strewn with camel droppings, and in the middle of this circle is the well.

The Tuareg have another name for the well used to irrigate the gardens: this is the "tanout" (plural: "tounin"). These

/157/ II

Geology

133 Thanks to the work of C. Kilian, Th. Monod, J. Bourcart, and particularly to that of M. Lelubre, partially published, it is possible to give a general idea of the geological structure of the Ahaggar and to sketch in its history.

General view

A. The center of the massif is essentially crystalline, formed of very old rocks from the pre-Cambrian age, already partially leveled at the time of the transgression of the tassili. During the tertiary period there was a rejuvenation of the relief after a powerful volcanism. This mass with the crystalline base has an altitude of 2, 600 meters at the center of the massif; it slopes off at the periphery to form the trench separating the Atakor from the tassili.

B. The tassili are plateaus of nonmetamorphic sandstone. This sandstone surrounds the crystalline mass nearly uninterruptedly. Resting on the crystalline foundation are, first, conglomerates which constitute the lower sandstone of the inner tassili, then, sandstone in small columns, topped by graptolite-bearing schist (intra-tassili depression) and overlooked by the upper sandstone of the outer tassili.

The regions leading to the tassili show Devonian and Carboniferous formations with fossils.

M. Lelubre, going beyond the simple description of the rocks, has been able to determine the genesis and the geological history /158/ of the Ahaggar thanks to data from stratigraphy, lithology, and tectonics.

1. Stratigraphy. -- The schist which bears Gothlandian graptolites rests on nonmetamorphozed Ordovician, or perhaps Cambrian, sandstone, itself resting on a thick base of

133 /158 cont./ conglomerates which are unconforming on folded, granitized, and leveled crystalline schists; this permits the deduction that the lower crystallophyllian parts are pre-Cambrian. Furthermore, M. Lelubre has discovered in the pre-Cambrian crystalline region a Suggaro-Pharusian unconformity, thus showing the existence of an ancient Pharusian basin stretching like an immense north-south trench between two Suggarian massifs. The two lines of unconformity followed by M. Lelubre are marked by rhyolite massifs which emerge from the present-day reg, marking a former volcanism at the edge of these submeridian fractures similar to the recent breaks in eastern Africa. The eastern line of unconformity follows the 5° east longitude from the Adrar In-Hédrane to the north up to the eastern edge of the Tassili de Tin-Reroh; the western line goes from the In-Zize massif up the Adrar des Iforas (40 kilometers west of Tin-Elhaoua); it goes along the western border of the Tassili de Timissao. These two orogenic cycles, Suggarian and Pharusian, have their own special metamorphism, granitization, and foldings.

2. Lithology.--The main rocks surveyed by M. Lelubre are the crystalline schists, the granites, and the vein-bearing rocks /filons/.

The crystalline schists (mica schist, gneiss, etc.) form large mountains; Egéré, Arefsa, Tourha; they dominate in the Suggarian and Pharusian series.

There are granites from different ages. Those of the Pharusian type seem to be "punched out," having produced metamorphic aureoles by contact, such as the Serkout, In-Tounin, Tesselit. Other, older granites appear in "large elongated north-south ellipses"; the Tefedest massif is one of these types.

The main vein-bearing rocks are the microgranites: Tarahouaout and Sersouf regions. Pegmatites are /159/ abundant in the granites and the gneisses; veins of quartz seem to fill vast cracks and form long mountains; border of

• 133 /159 cont./ the Igharghar wadi. The rhyolites form enormous massifs west of the Ahaggar, aligned in two long belts. Nice series of cipolins and marbles, only calcareous rocks of the Ahaggar, are found in the Egéré, the Tourha, and at Azrou. Finally, volcanic rocks cover immense areas, particularly in the center of the Ahaggar.

3. Tectonics. -- Due to the resistance to erosion of the cipolins, M. Lelubre has been able to inspect a very old flexible dislocation upon which a faulted dislocation is superposed: a phenomenon perhaps resulting from Pharusian orgénèse. /Note: the latter word doubtlessly is a misprint for orogénèse, "mountain building." -- Tr./ Then, Hercynian tectonics are marked in the tassili by very large fold-faults. Finally, there are fractures, resulting from the under folds of the Alpine system, which doubtlessly are linked with recent volcanism.

Geologic History of the Ahaggar

1. Pre-Cambrian

a) Suggarian cycle. Nearly all the crystalline schists of the Ahaggar are from this age. It is almost impossible to set up time divisions during this period which witnessed intense sedimentation followed by folding of the Appalachian type. This cycle ended by the emersion of the Suggarian chains.

b) Pharusian cycle. A long period of erosion followed, filling in the inter-Suggarian furrow. These series underwent a less intense metamorphism than in the preceding cycle. Heavy folding occurred and "punched out" granites later appeared. Rhyolite emissions may be placed in the lower Pharusian.

• 133 /159 cont./

2. Tassili Transgression. Hercynian Cycle.

The conclusion of the Pharusian cycle marks the end of the depth history of the Ahaggar, which from then on consists of a solid system /160/ reinforced by granitic intrusions. An erosion of long duration affected this old massif. It cannot be said whether or not the transgression which followed reached the whole Ahaggar, but its extent shows that it was on a continental scale.

Certain schists contain the first dated fossils: graptolites from the lower Gothlandian. In an upper series, Conrad Kilian has been able to show periods of lagoons, which represent light Caledonian movements. Conglomerates separate the post-tassili series which is ascribed to the middle Devonian or the Carboniferous. This uncovered series is affected by deep Hercynian folds, with the most striking example being the great fault of Tadjemout. It is not known to what extent this folding has affected the crystalline substratum.

3. Cenomanian Transgression

The great marine invasion which covered the Sahara in the middle Cretaceous and cut Africa in two spared the Ahaggar. C. Kilian has found merely a little Cretaceous material in the Amguid region. This doubtlessly was the last incursion of the sea, and it seems really to be a question of no more than a gulf.

4. Alpine Cycle

It was not until the Alpine folding that one sees an orogenic manifestation in Tuareg country. We may admit as true that the reaction to this folding caused volcanism in the Tertiary and the Quaternary, the lava of which covers a large part of

133 /160 cont./ the Ahaggar and which must have lifted the central core. A thorough study of this volcanism has not yet been made by specialized geologists (1). Perhaps it will be

1. Since 1950, P. Bordet has been studying volcanism in the Ahaggar. M. Lelubre's thesis on the pre-Cambrian in the Ahaggar was published during the Geological Congress of Algiers in October, 1952. On this occasion several regional monographs concerning the Ahaggar were published: L'antécambrien de l'Ahaggar /The Pre-Cambrian in the Ahaggar/ by M. Lelubre; Les appareils volcaniques de l'Ahaggar /Volcanic Mechanisms of the Ahaggar/ by Bordet; Ahnet et Mouydir /Ahnet and Mouydir/ by J. Follot.

possible to /161/ separate the essential phases of this eruptive whole.

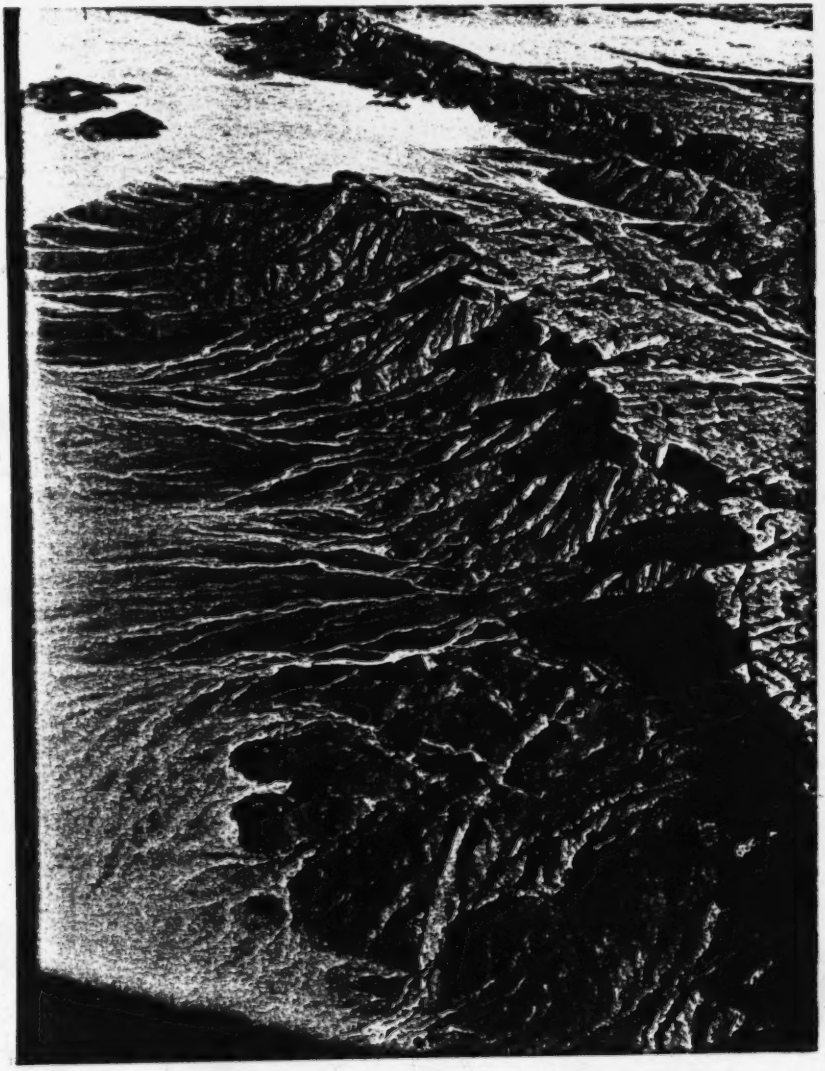
Study of the Quaternary has not been undertaken. Such a study would perhaps enable us to establish some points very interesting for archeology, notably the advances and retreats of the desert climate.

/163/ III

Meteorology

132 Following are some figures concerning meteorology, furnished by the Tamanrasset observatory and the O. N. M. station.

● 133



1. Aerial view of the Adriane massif.

[p. 183]

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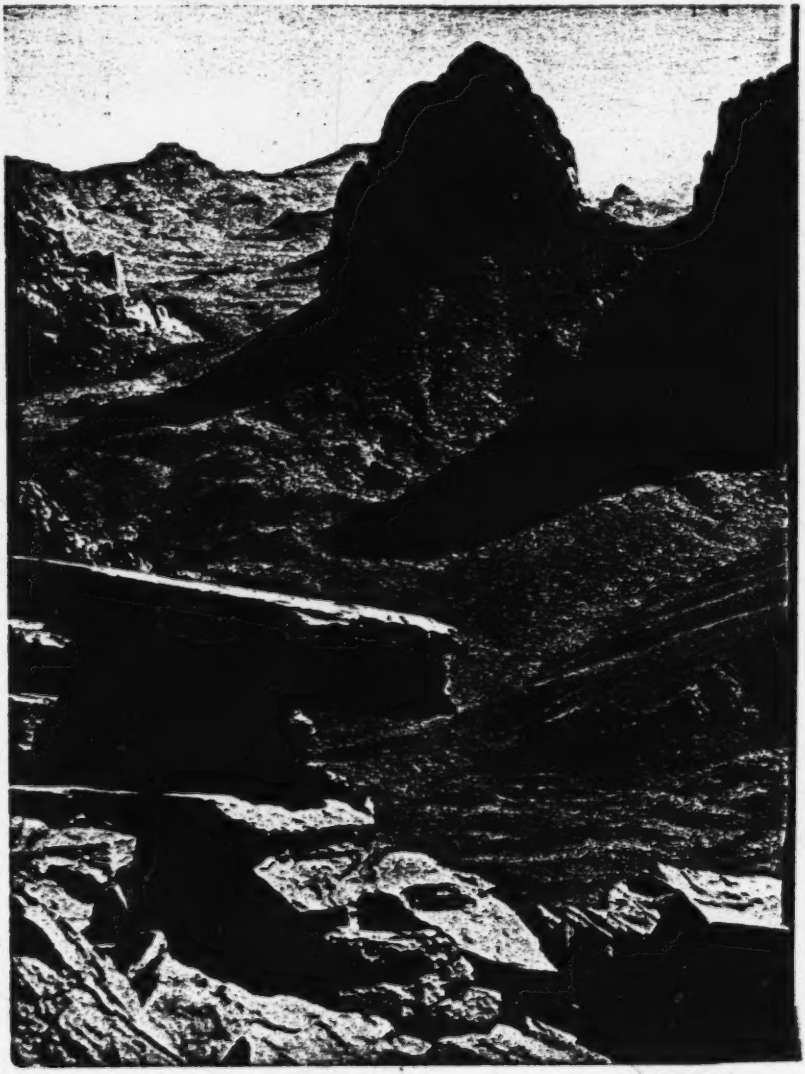
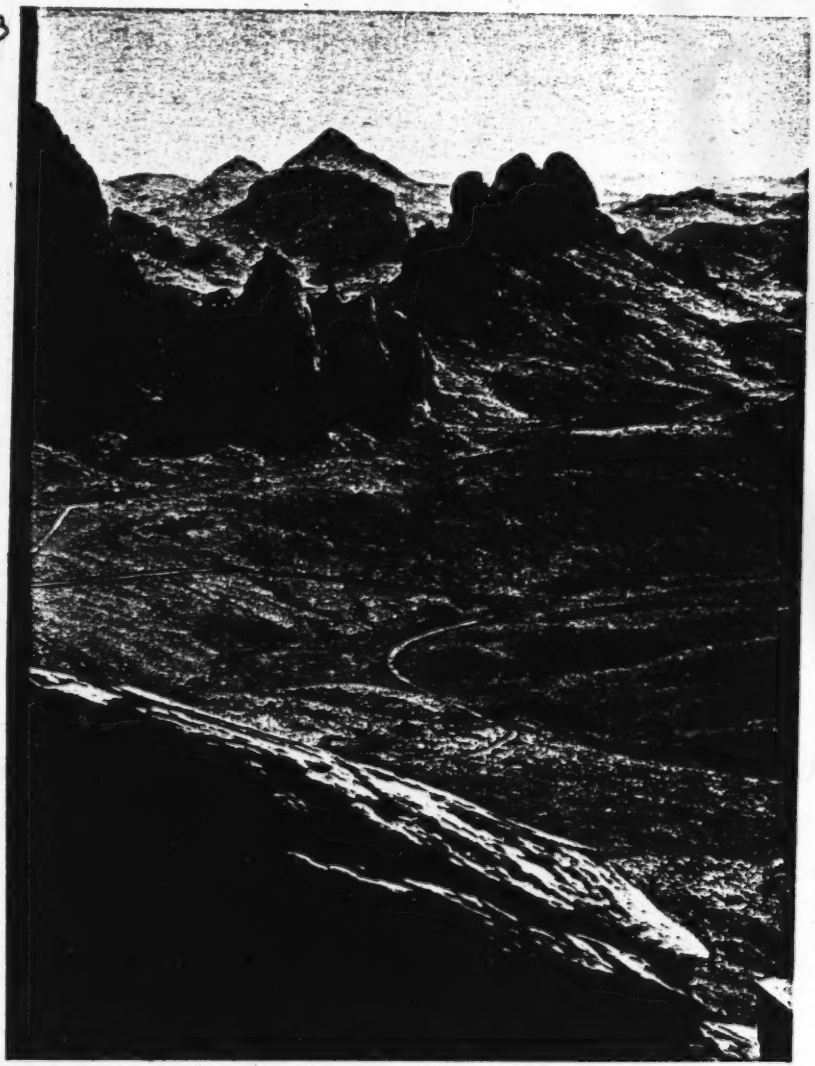


2a. In the Atakor, heart of the Ahaggar, the Fidjemayène massif seen from the Séouénane summit.

[p. 184] [left] [see p. 185]

133

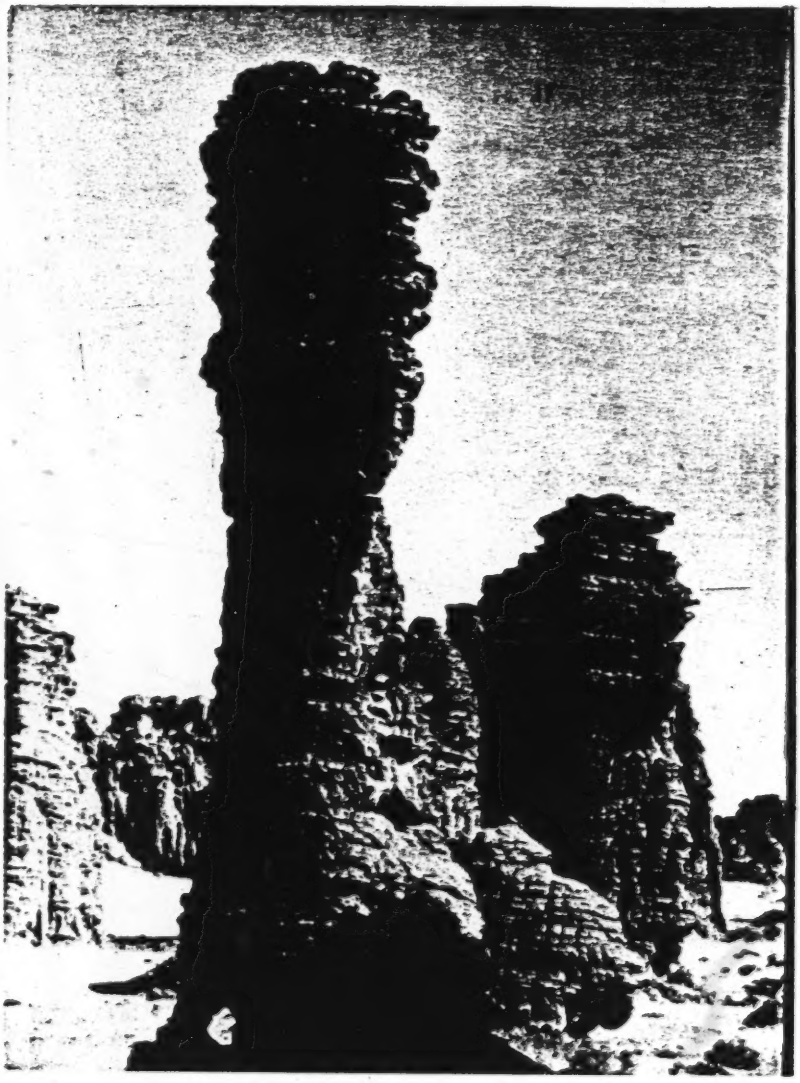


2b.

[p.185] [Right - see p.184]

6:Blanguernon Y-5 (1937-1954) 1955 MS25 Tuareg MS25
Hoggar

● 133



4a. Tassili landscape.

[p. 188] [left - see p. 189]

● 193

4b. [p. 189] [Right- see p. 188]

6:Blanguernon Y-5 (1937-1954) 1955 MS25 Tuareg MS25
Hoggar

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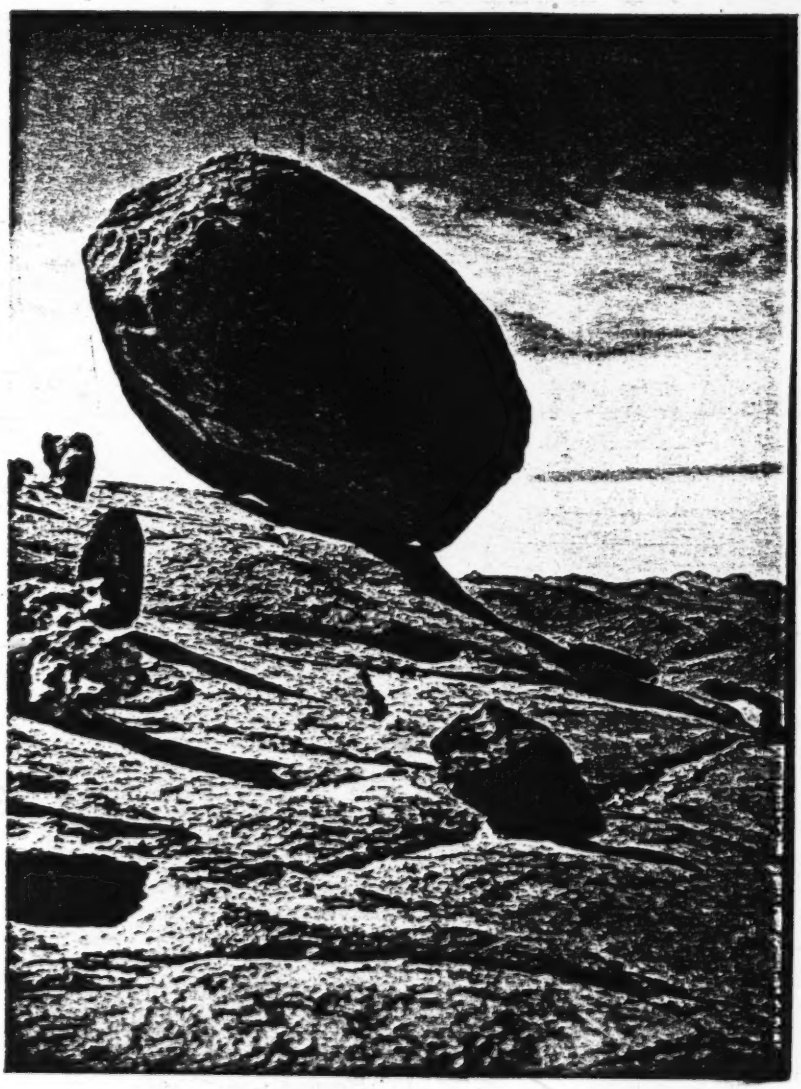

5. Phenomenon of granitic erosion (in the Mertoutek wadi).

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6:Blanguernon Y-5 (1937-1954) 1955 MS25 Tuareg MS25
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6. In a wadi of the Atakor during a dry period.

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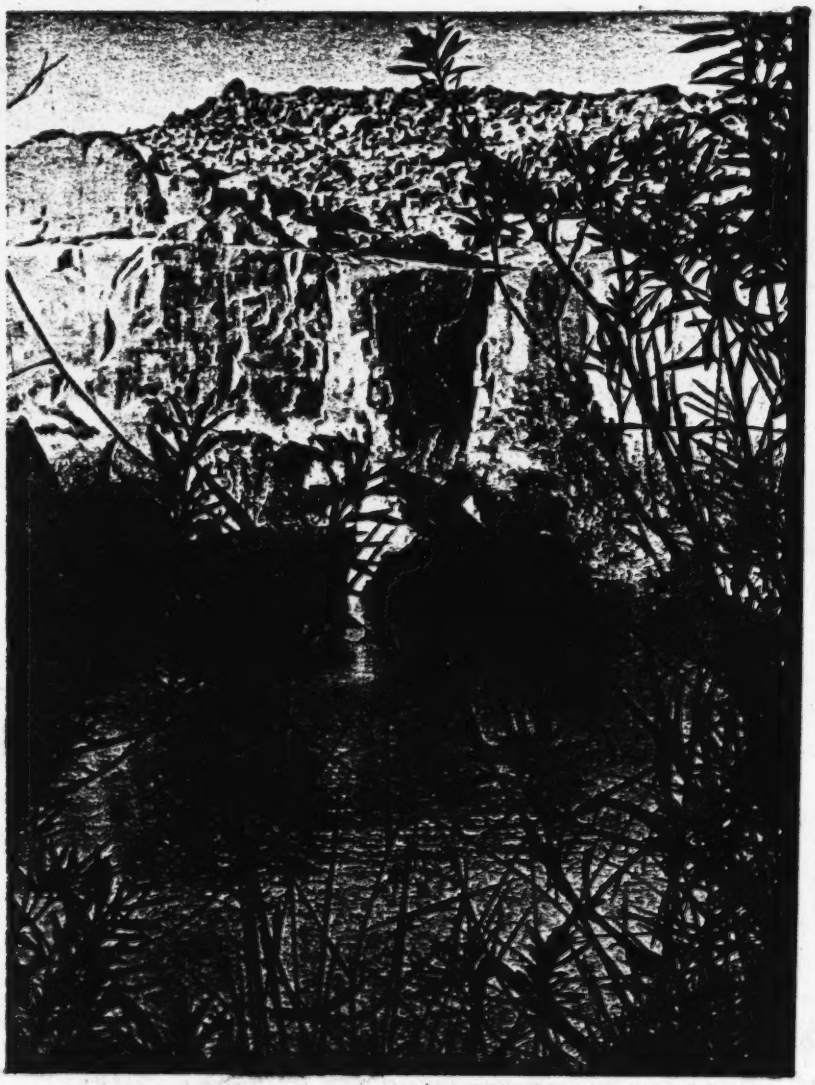

7. Oleanders bordering the Issakarassène guelta.

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6:Blanguernon Y-5 (1937-1954) 1955 MS25 Tuareg MS25
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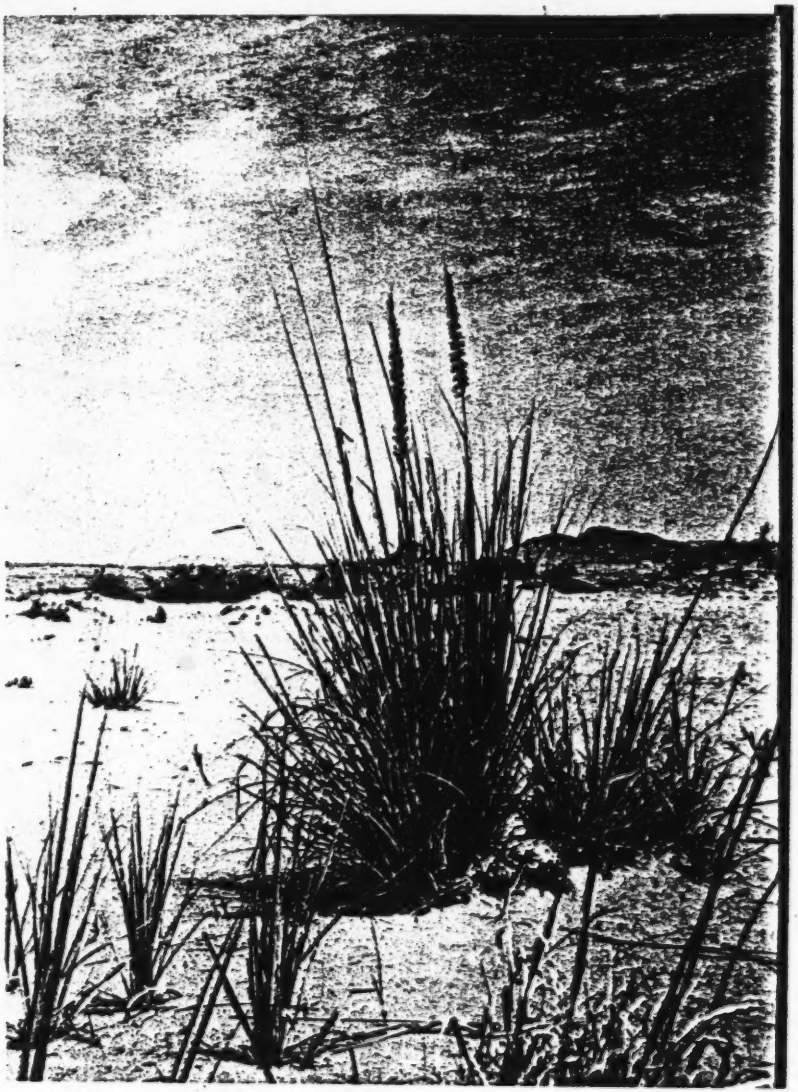

11. A tesendgelt (Eragrostis bipinnata).

[P.196]

6:Blanguernon Y-5 (1937-1954) 1955 MS25 Tuareg MS25
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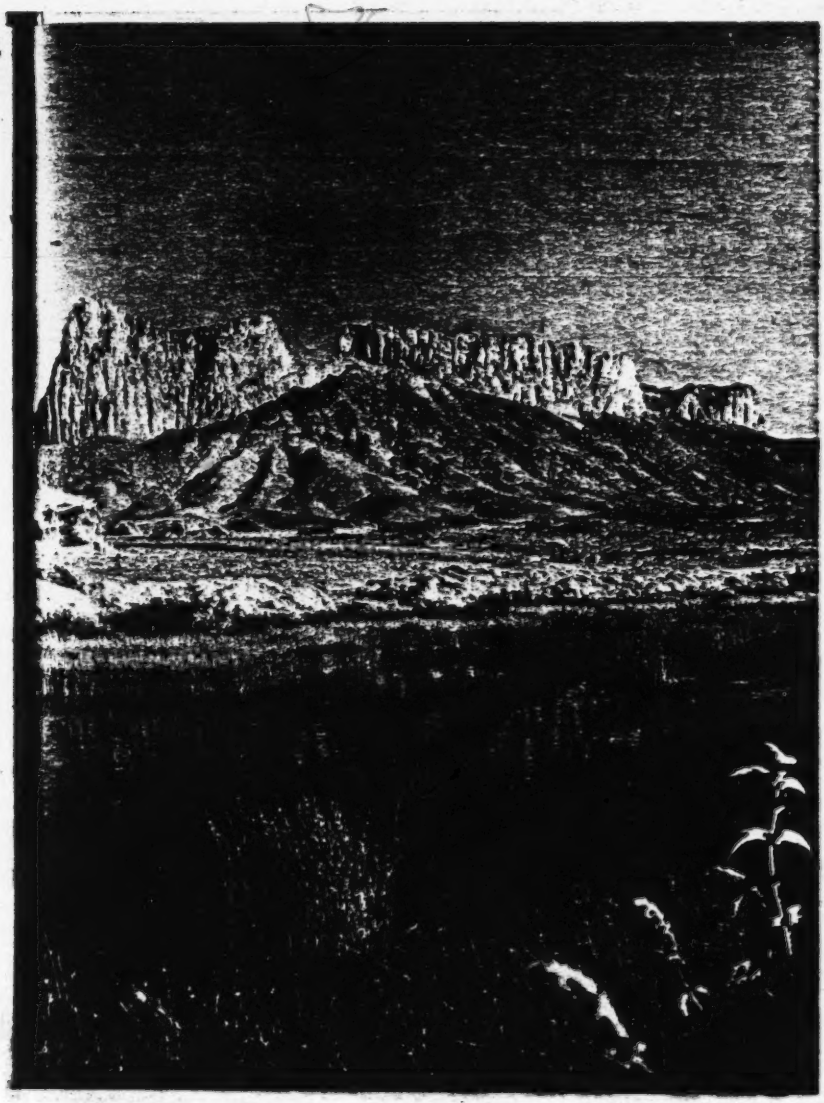

12. Tamanrasset. The Adriane agricultural center.

[p. 197]

6:Blanguernon Y-5 (1937-1954) 1955 MS25 Tuareg MS25
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13. A thora (Callotropis proscera) in the Tamanrasset wadi.

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Environment

Tuareg country ranges from comparatively fertile savannah in the south to barren desert in the north, where the nomads live in or near mountainous regions. Four Tuareg groups are named after the dominant mountains of the Western Sahara, namely those of Ahaggar, Tasilé-n-Ajjer, Adṛaṛ-n-Foṛas, and Ayr.

The mountains of Ahaggar are by far the highest. They consist predominantly of archaic and proterozoic rocks, and of basalt and tufa from a relatively recent period. They are generally of a very dark colour and characterized by formations of rugged ranges, craters and isolated peaks which also bear evidence to former volcanic activity. But the rugged contours of the Ahaggar Mountains are also created by a complicated network of river valleys eroded mainly during the pluvial periods contemporary with the European Ice Age.

The Ahaggar Mountains fall into three main massifs of which that named Atakor is the most important and the highest, with peaks up to 3000 metres above sea level (Ilaman, Tahat). To the north is the massif of Téfedest with peaks which surpass an altitude of 2000 metres, and to the east the lower massif named Anahef. In geological structure these three mountain massifs of Ahaggar differ from the mountains of Ahnet, Immidir (Mouydir), and Tasilé-n-Ajjer which surround Ahaggar in the north. These latter massifs consist predominantly of paleozoic sandstone. They are not so high above sea level and form comparatively flat plateaux. The maximum altitude of Ahnet is 1300 metres while the peaks of Immidir rise to 1680 metres. The extensive plateau of Tasilé-n-Ajjer is on average 1200 metres above sea level, but a few peaks in the south exceed 2000 metres. Parts of the Tasilé-n-Ajjer mountains are covered with basalt rocks, and the river valleys of the comparatively level plateau often form true canyons which make traffic much more difficult than in the higher and more rugged mountains of Ahaggar. Between and around the northern mountain massifs the country consists mainly of flat plains covered with gravel and stone. Extensive areas of sandy desert are rare except in parts of the *Kel Ajjer* territory.

Far to the south of Ahaggar are the low mountains of Tasilé-ta-n-Ahaggar, which are structurally related to the *tasilé* mountains in the north. This area is of little importance to the Tuareg and, in contrast to the higher and more extensive massifs of Adṛaṛ-n-Foṛas and Ayr, is not regularly inhabited. While the mountains of Adṛaṛ-n-Foṛas are everywhere below 1000 metres, the peaks of Ayr rise to almost 2000 metres above sea level in the east and the north where the country is covered with basalt rocks. Idukalen in the Begzen Mountains is 1900 metres above sea level, while the Tamgak Mountains in the north have a maximum altitude of about 1800 metres. In its most mountainous parts the Ayr

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

133 Massif resembles Ahaggar, but it is on the whole much more level with broader valleys and in between the lower mountains there are clayey plains. Immediately east of the Massif is the very extended sandy 131 desert which is uninhabited. Further south than Aḍraṛ-n-Foṛas and Ayr there are no considerable mountains. Between the two massifs are the plains of Tamesna and Talak which continue into the plains of the Sudanese savannah.

Tuareg country consists predominantly of rocky mountains and flat, extensive plains of gravel and stone. This configuration is basic to our understanding of Tuareg economy as will become clear when we have outlined the characteristic features of climate.

132 Tuareg country is very hot in summer – so hot that even the nomads born and bred in the country suffer much from the heat at that season. The hottest months are May, June (farthest south) and July (farthest north). During these months temperature may exceed 50° centigrade, and is on average 30°–35°, or higher. In the uppermost mountain zone of Ahaggar nights are comparatively cool even in summer, while in the lower country there is often little difference between day and night temperatures. This is true in particular when, as often happens in summer, the sky is overcast during the night and consequently there is little radiation of the heat absorbed by rocks and sand in daytime. The day temperature in summer is normally higher than the temperature of the human body, and the temperature of sand and rocks will rise to 60°–70°. Travelling is extremely hard under such conditions, 404 and most people spend the day in the shade of rocks and trees, sleeping and drinking water of which 271 an adult person consumes 8–10 litres a day. Violent winds are common in the Sahara most of the year and in particular in the daytime; in summer these winds are usually very hot and add considerably to the discomfort of the climate, as do the numerous flies.

The country of the Northern Tuareg has a rather continental climate characterized by great fluctuations of temperature during the year. Although Tuareg suffer from heat in summer, they do not generally complain much about it, and they consider the comparatively cold winter much worse than the hot summer. In winter, temperature in the country of the Northern Tuareg averages about 10°. The absolute minimum temperature however is very much below this. Thus in Ahaggar the village of Tamanṛaset (1400 m) has in January an average temperature of 11,7 , but an absolute minimum of −6,6 . Frost is very common during winter nights, and even snow may fall in the higher parts of Ahaggar at that time of the year. In the country of the Southern Tuareg frost may also occur, but in Southern Ayr around Agadez frost is said to be very rare and snow is unknown; the winter period 511 in the south is on the whole milder than in the north, where the changes between relatively cold and 164 very hot temperatures, allied with inadequate dwellings and clothes, are responsible for pneumonia and similar diseases, which give rise to frequent deaths – especially among children.

The most important climatic distinction between the countries of Northern and Southern Tuareg is due to differences in the annual precipitation as will be seen from the following figures (in m/m) for the annual rainfall 1931–1945 in the territories of seven Tuareg groups:—

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The climatic and botanical differences between Ayr and Ahaggar can be seen directly from Tuareg division of the year into four seasons each having a duration of about three months. Ayr has a summer season and a winter season between which there are two seasons termed *akasa* (sometimes also called *él*, or *éṛafit*) and *ṛarat*. These two words as seasonal terms indicate that rain and annual vegetation in Ayr are recurrent events. For the word *akasa* literally means "green annual plants" while the word *ṛarat* refers to "dry annual plants". The season *ṛarat*, most of which is extremely dry, is followed by the winter season *tigrest* where rain does not fall, though the northern outskirts of Ayr sometimes have a little rain at this season. The transitional period between winter and summer known as *tabsit* is not considered a main season, but it is frequently mentioned by the Tuareg because certain perennial plants germinate at that time of the year. The summer season *éwilen* is extremely hot and rainless. It is the season of defoliation for acacias and various other perennial plants which change their leaves – generally in the way that they do not loose all leaves at one and the same time. Therefore, even in summer most acacias have some green leaves, though in certain places where rain has not fallen abundantly acacias may loose all their leaves in summer. In certain unfavourable regions outside of the Ayr Massif, acacias may even be without green leaves for a few years, but such trees become verdant again with heavy rainfalls. Scattered barren acacias are found mainly to the north of the Massif. The Tuareg say that acacias can survive an extremely long period of drought during which they are entirely dry. But they normally become green again when rainfalls start. The beginning of the rains is known to the Ayr Tuareg as *t'ézewek*.

In Ahaggar the Tuareg reckon with a summer season named *éwlen* and a winter season called *taǧrest*. These two seasons are separated by the autumn known as *amewan* and the spring termed *taſsit*. The Ahaggar Tuareg know the words *akasa* and *ṛarat*, but do not employ them for seasonal terms because rain and annual pasture do not recur annually in their country. The summer season *éwilen* is extremely hot, but it is not the proper season of defoliation for acacias, which under favourable conditions are green in summer and defoliate in winter. The autumn *amewan* which follows upon the summer is characterized by less hot temperatures and gradually changes into *taǧrest* (winter) when frost is extremely common during night, and snow falls in the mountains. This cold winter season is followed by the spring *taſsit* when many perennial plants germinate.

As will be seen from this description of the year in Ayr and Ahaggar these two countries differ much in regard to climate and plant development. Within each of the two areas there are climatical and botanical zones which are very different.

The Ahaggar Mountains, according to Maire, fall into three distinct zones of vegetation:— 1) *A Tropical Zone* up to 1700–1800 metres above sea level. 2) *A Lower Mediterranean Zone* between 1800 and 2300–2400 metres above sea level. 3) An *Upper Mediterranean Zone* from about 2400 metres up to 2918 metres which is the extreme altitude of Ahaggar (cf. Maire 1933 & 1940; Lhote 1955, p. 41 f.). This division of the Ahaggar Mountains into zones of vegetation by a learned botanist seems to correspond largely with the division of the mountains into three distinct zones by the Tuareg. These three Tuareg zones and their characteristic perennial plants are the following:—

1) *Abada*, the lower parts of Ahaggar where perennial plants are abundant along the broad river valleys. Trees are very important the main species being various acacias (*absef*, *Acacia Raddiana* &

[text continues on p. 31]

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

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Fig. 17. A slave-boy takes kids out of the stone-enclosure (*aɣror*) to let them suck. Ahaggar, the *Aṭṭuh-en-tehlé* tribe.

*233 yielding decreases after mating. It is said that some goats yield milk in the whole period of gestation, while others have no milk whatever during most of that period.

The advantage of free mating is further reduced because goats, if mated too often, become emaciated, and for the northern breed their coat of long hair, so important to craft (cf. p. 263 ff.), will not develop fully. Added to this, kids born in the hot summer season will often be of inferior quality, as they suffer from heat and the lack of fresh annual plants during their period of growth. Again, the mother animals may yield so little milk in summer that it is not even sufficient for the nourishment of their kids.

The free mating of goats is not generally desirable, and therefore most Tuareg practise a system of regulation which varies with the qualities of pastures. If reproduction of the flock is badly needed it may happen that all goats are mated twice a year, but it is considered an ideal in good years to divide the animals into two parts which bring forth kids and yield milk at different seasons.

*233 In Ayr when the flock is divided into two parts to bring forth kids and yield milk at different seasons,
132 one part brings forth kids during the season of *akasa* when the pastures of annual plants are very
[137] rich, the other at the end of the winter season during the period known as *tabsit* at which time certain other plants germinate, and fruit-pods of the *afagag* acacia (*Acacia Raddiana*), which are extremely good for fodder, fall to the ground. If kids are wanted for a flock during the season of *akasa*, which is the best season for the birth of kids, the goats are mated in winter. When all the she-goats have been covered, the penis of the he-goat is bound around the foreskin by means of a cord – a method which is known to the Ayr Tuareg as *ékkan*, to the Northern Tuareg as *ayun* (cf. Fig. 25). If kids are wanted for a flock in spring at the season of *tabsit*, mating stops with the binding of he-goats at the

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

CAMELS

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Camels are very important domestic animals in all Tuareg groups, and they also play a great part in the subsistence of most Arab pastoralists of the Northern Sahara. The common Arab camel breed, which is known to the Tuareg as *marroki*, is also found in Northern Tuareg country – particularly among the *Kel Ajjer*. It is heavily built and is extremely well fitted for transportation. It is a very strong breed in spite of its relatively low stature, and it has large feet which is considered an eminent quality for pack camels. This *marroki* camel has a thick cover of wool on the hump and on the fore-part of the body, while Tuareg camels, which are of higher stature and more elegantly built, in general have little or no wool, but only a short coat of hair much like that of cows and horses. Tuareg camels may have long hairs around the hump but true Tuareg camels have no proper coat of wool. Though the *marroki* breed is excellent for transportation and is considered a better milch-animal than the southern Tuareg breed, the Tuareg generally prefer their own elegantly built camels, and they look down upon the heavily built camels of the north. However, as mentioned, there are some *marroki*

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Fig. 33. Tuareg with riding camels. Ahaggar, the *Ajjak-en-tekki* tribe.

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Fig. 35. A young camel (about 14 months old) sucks its mother before milking. The Tuareg boy bends up the right foreleg of the she-camel and ties it in this bent position to the left foreleg – a method known as *ɛsemmeil*; it is applied to she-camels that are restless during milking. The she-camel has the colour name *tɛserift*, its big calf that of *arlay*. Ayr, the *Imezzureg* tribe.

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(cf. Cauvet 1925–26, I, p. 15, 76 ff.). I have inquired about this, and the Tuareg seem to hold that all camels have an identical number of teeth.

She-camels should ideally be reserved for breeding which is a very slow process. A severe loss of goats during a drought can be restored quickly once rainfalls start again, but this is not so with a loss of camels. She-camels are not generally mated until they are about three years old, and their gestation period is about one year. In addition, she-camels get only one calf which has a long period of sucking so that a she-camel is frequently not mated until one year after the birth of a calf. In other words:—

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One she-camel has only one calf every two years. For this reason, and because a grown camel has about the same value as 25–30 goats, the Tuareg pay much more attention to camel-breeding than to the breeding of goats and sheep.

Most she-camels are mated during the cold season in Ahaggar, while the proper season of mating in Ayr is *akasa* with the beginning of *ɣarat*, though some she-camels are also mated in the spring period known as *tabsit*. As the gestation period is about one year most camel calves are born during the cold season in the north, in the rainy season when annual plants are well developed in the south. The rutting male camels roam freely in search of she-camels on heat, and a Tuareg may own several she-camels and not even possess a bull-camel for breeding. Both in Ahaggar and in Ayr there are Tuareg who try to keep their very excellent bull-camels away from herds other than their own, but this is considered very bad conduct. In fact, there are Tuareg who do not know with which bull-camels their she-camels mate though the act of mating is normally seen and heard by somebody. Mating is also very frequently arranged by the Tuareg who then assist the bull-camel in introducing its penis into the she-camel's vagina. The act of mating may be connected with some difficulty for the bull-camel because the she-camel has to lie down on the ground during copulation.

A she-camel is well looked after during the period it is expected to have a calf. She stands upright while bearing the calf, and the umbilical cord breaks when the calf falls to the ground. The birth of a calf is not always seen by the owners but they will generally be present at least a few hours after birth.

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Fig. 36. Two Ayr Tuareg milking a she-camel with the colour name *tawinak*. Ayr, the *Imezzureg* tribe.

They draw out the placenta (in Ayr known as *t'imidin*) by the attachment of a heavy stone to the membrane (*abayor*). It is also common a few hours after birth to draw a little milk from the mother camel and pour this milk into the calf's mouth in order that the new-born animal may be able to stand upright and suck its mother quickly. When this has been done it is normal to bleed the mother-camel. Some milk drawn on the day a she-camel has borne a calf is frequently consumed by the Tuareg (cf. *Ader*, p. 221), but with this exception the new-born calf is allowed to drink all its mother's milk for the first days after birth. The period during which the calf sucks freely varies. It depends on the yield of the mother-camel and is also determined by the amount of milk available to the owners from other animals. Milking may exceptionally start already four or five days after birth, but this is not normal. The calf is frequently allowed all milk for a fortnight, or even for a whole month. In Ahaggar when pastures are very dry it is quite normal not to milk a mother-camel at all for a still longer period.

The entire suckling period, that is the period in which the calf is allowed to drink part of its mother's milk, including the short period when it sucks freely, also varies. But here there is one main rule: a calf is allowed to suck as long as its mother-camel is milked, for she-camels, like cows, do not generally yield milk unless they have their calves close to them. It is normal to mate a she-camel about one year after the birth of a calf. She will then yield milk for about six months after mating, so that the total suckling period is about 18 months, at the end of which period the calf will be allowed very little milk. If a she-camel is not mated so soon it may yield milk for a longer period, and the suckling period may even be up to about two years when the calf is a grown animal almost as big as its mother.

There are various methods to secure milking in case a camel has lost its calf. The dead calf may be substituted by another calf, but the dummy-calf is also used with she-camels. This device is known as *ahayoy* (Ahaggar), or *azeyaz* (Ayr). Both in Ahaggar and in Ayr it is claimed that some she-camels can be milked without their calves if their udder is patted in a particular way with the hands – which treatment is known to the Ayr Tuareg by the name *ewlewl*. The method of blowing into the vagina described above for cows (p. 51) is never employed with she-camels. But there is another method for

[text continues on p. 59]

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Fig. 78. She-camel with the colour name *tuzurzumt*. Ayr, the *Imezzureg* tribe.

cauld:— ***sekkedi*** (to let camels trot very slowly at an artificial gait known as *téredeyt*), ***sellwes***, or ***sellwen*** (to let camels walk at a normal ambling pace), ***eg senat-senat*** (to let camels trot slowly at a gait known as ***senat-senat***), ***sekkeber***, ***keburet***, and ***keberkeber*** (a kind of trotting named ***akabur*** which is somewhat faster than ***senat-senat***), ***regiregi*** (to let camels pace or trot at the types of gait known as ***tétalist***, ***senat-senat***, and ***akabur***), ***eg yukey-eder-tayit*** (to let camels adopt a fast trot known as ***yukey-eder-tayit***), ***uyhal*** (to let camels adopt a sharp trot), ***enteg*** (to let a camel gallop), ***awdet*** (to let camels trot or gallop; this verb does not refer to any particular type of gait but to several, from the slow trot known as ***senat-senat*** to the very fast gallop known as ***tabederat***). These gait-terms are used only for camels, but the Tuareg also have terms for gaits of other domestic animals – particularly for those of horses (cf. Foucauld 1951–52, II, p. 553 ff.). The gait known as ***téredeyt*** is considered very elegant by the Tuareg, who train camels to walk in this way already when the animals are very young. This is done by means of a large and wide hobblerope tied around the forelegs above the knees the animals being forced to walk by whipping them lightly on the legs (cf. Foucauld 1951–52, IV, p. 1696). As far as my knowledge goes the Ayr Tuareg have terms very similar to those mentioned above, but I have not taken them down in my notes and only remember very few of them, e.g. ***tarajawit*** (a camel which roars during loading and unloading), ***alem-n-akabur*** (a camel walking with very quick steps), ***alem-n-emehal*** (a camel which takes very long steps). 233 192

Considering the very special camel terms just mentioned, it is only natural that the Tuareg also have many terms to cover the use and training of camels. Thus the Ahaggar Tuareg can refer to a normal heavy pack-camel by one of the following terms which are synonymous:— ***abakhul***, ***dekhkhe-dekh***, ***agelgali***, ***akhelkhali***, and ***érikhi***. For riding camels the following terms can be mentioned:— ***ayiam*** (any riding camel), ***aserensera***, ***tanegmoj***, ***taletmot***, ***arretus*** (excellent and very fast running riding animals). There is also a term for a fully-trained riding camel (***amanun***), and another for a camel which is not yet fully-trained (***asanan***). 233 492* 192

[Text continues on p. 101]

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

of riders and their camels. This is intimated by the following poem quoted from Foucauld's excellent books on the poetry of the Ahaggar Tuareg:—

Ébeydeg, é ti n ami mellen	My white camel, O woman with white teeth
W-allahi! iḍeg ul ifel kem	I swear by God, it shall not go raiding, shall not leave you
Ula daṛ ikk am akal ien	It shall not go away from you to another country
U i ḍineṛ ar y arabuh ennem	I lead it to the pastures only to visit you with love again
Ula taharġit d asemmeḍren	Neither in dreams nor in thought
Innin é ham yekk akal ien	Shall it go away from you to another country

(cf. Foucauld 1925-30, I, p. 210 f. for a literal translation).

DONKEYS

Donkeys are very important domestic animals in the Tuareg groups I have studied. Most animals are grey or greyish but there are other colours for which the Tuareg have special terms. From Ahaggar the following colour-terms can be mentioned:— *adebara* (greyish), *afawa* (greyish with a white stomach), *ewriṛ* (yellow-brown), *ébenbey*, or *takenbawt* (donkey with a black head), *ékawél* (black). Black donkeys seem to be more common among the Arabs of the Northern Sahara than among the Tuareg.

Donkeys vary less in colour than other domestic animals among the Tuareg. It is interesting to note in this connection that there are fairly big herds of wild donkeys, or asses, in the mountainous massifs of Ahaggar, Tasilé-n-Ajjer, and Ayr. These animals are generally greyish like most domestic donkeys.

Fig. 83. Women carrying cereals in skin bags loaded on donkeys. Ahaggar, the *Dag Ɣali* tribe.

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Each of the three vegetational zones of Ahaggar has its advantages and disadvantages. If we consider a good year when rain has fallen abundantly with a resultant regeneration of all fodder plants, the *Atakor* zone has very excellent pasture. For the plains and the stony mountain slopes are then entirely covered with annual plants which by the Tuareg are considered the very best fodder. The Tuareg also claim that the upper mountain zone is preferable because of its cooler climate, which has a beneficial influence on the lactation of domestic animals. The disadvantage of the *Atakor* zone is the lack of acacias to which can be added the scarcity of fuel. The *Tarayin* zone possess characteristics of the *Atakor* zone and of the *Abada* zone. The *Abada* country is botanically very different from *Atakor*. It has annual pastures of great value when abundant rainfall has been experimented and it also has valuable pastures of perennial plants. With heavy rain the *Abada* country is excellent for stock-breeding, and fuel can be found everywhere. But the Abada country is hotter than are the zones of *Tarayin* and *Atakor*.

If rain falls abundantly all over Ahaggar there is good pasture in all three zones. But rainfall is more frequent and heavier at high altitudes than in the *Abada* zone, so that *Atakor* normally has by far the best pasture of annual plants which spring up late in summer or in autumn. The *Abada* zone on the other hand has the very best pasture of perennial plants, notably acacias that grow around the lower parts of the valleys which are always flooded when it rains in the high mountains.

The fluctuations of plant development determine the nomadic migrations of the Ahaggar Tuareg. A few tribes have their normal grazing grounds in *Atakor* (e.g., the *Dag Rali* and the *Kel Tazulet*). They camp in this zone at most seasons to let their goats and sheep feed on fresh and dry annual pasture. In dry years and during the hot summer season they may move to the *Tarayin* zone where there are perennial fodder plants, but they rarely camp in the *Abada* country. Many tribes have their normal grazing grounds in the *Abada* zone (e.g., the *Aguh-en-tehlé*, the *Ayt Lowayen*, the *Iheyawen Hada*, and the *Kel Rela*), but move to the *Atakor* when annual pasture is good in this region. They live in *Atakor* with tents and flocks when annual plants are green, while the rest of the year they camp in the *Abada* country to let their animals feed on acacias and other perennial species. Finally there are two tribes (*Tégehé-n-Efis* and *Iklan-en-tawsit*), the members of which camp in the *Abada* country all the year round even when rich annual pasture is found in *Atakor*. However, members of these tribes may send their camel herds to the *Atakor* zone, accompanied by herdsmen, while tents and flocks remain in the lower country.

With the exception of a few noble households which keep up their old tradition to subsist largely on camel's milk, the Ahaggar Tuareg do not keep their she-camels in Ahaggar unless there are excellent pastures of annual plants in this area. They take their camels to pastures far away from Ahaggar, notably to the Tamesna region where they have their animals guarded by herdsmen who are frequently slaves. In very dry years there are very few camels in Ahaggar – just the animals needed for riding and transportation. It is in fact very easy to take camels to distant pastures, and it is most necessary to give these animals the utmost care as they are most valuable and their breeding is a very slow process (cf. p. 56). Goats do not need such excellent fodder as do camels. They can eat almost everything, but in dry years goats may also suffer severely from lack of suitable fodder. This was the case in the year 1954/55 when I stayed in Ahnet and in Ahaggar. In the small camps of three to four tents each it was

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

221 *233 824 tagayt, while the *Iwillemmeden Kel Dennek* at this period will camp around Ingal. Many Southern Tuareg leave the savannah country to avoid its heavy rainfalls and stock-diseases to let their animals benefit from the salty water and plants in the *Azawaɣ* country.

●133 162 137 In the country west of the Ayr Massif, the Tamesna Plains, there is in addition to the Ayr Tuareg a numerous population of Ahaggar Tuareg who live constantly in these regions. These plains are botanically different from the mountains. Perennial vegetation is scarce though there are some *tamat*-acacias (*Acacia flava*), but there is a very rich vegetation of annual plants of great importance to *233 824 domestic animals. Among these plants can be mentioned *alwat* (*Schouwia purpurea* ssp. *Schimperi*), which is very valuable for camels and also good for sheep, *adreylal* (*Astragalus Vogelii*), and *tagellet* (*Colocynthis vulgaris*). The two latter plants are valuable as fodder for all domestic animals. It is noteworthy that these three species of annual plants last longer than other annual species. They do not wither at the beginning of the *ɣarat*-season, but remain fresh and green all through the winter until about *tabsit*.

It is evident that Tuareg knowledge of botany is extremely comprehensive, and that they use this knowledge to make stock-breeding as rational as possible. They may perhaps not be so rational in protecting pastures, for they cut acacias' boughs to feed the kids resting in the camps, and it is most possible that they also overgraze certain pastures. However, the grazing grounds are very vast in comparison with the number of pastoralists, and I believe that overgrazing and arboreal devastation take place mainly around villages and towns where the flocks of sedentary people graze continuously in the same area. In Ahaggar the valuable fodder plants and plants which are important for collecting are often protected for two or three months in order that they may become fully developed (cf. p. 150, 179).

*233 The Tuareg take great care that their animals do not lack water. It is true that camels and also donkeys can do without water for many days even in summer, but at this season camels should preferably be watered every two or three days, and goats are always watered every two days when the weather is hot. In winter the animals are not watered so often, and this is true particularly if the animals feed on fresh annual plants. Camels can do without water even for weeks and months under such favourable

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Fig. 97. The leather bucket known as *aju* to the Northern Tuareg. The leather is tied to an iron ring made by blacksmiths. Collected in Ahaggar by Olufsen. Dimension of the iron ring: 0.275 m in diameter. (N.M. G. 1.51).

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

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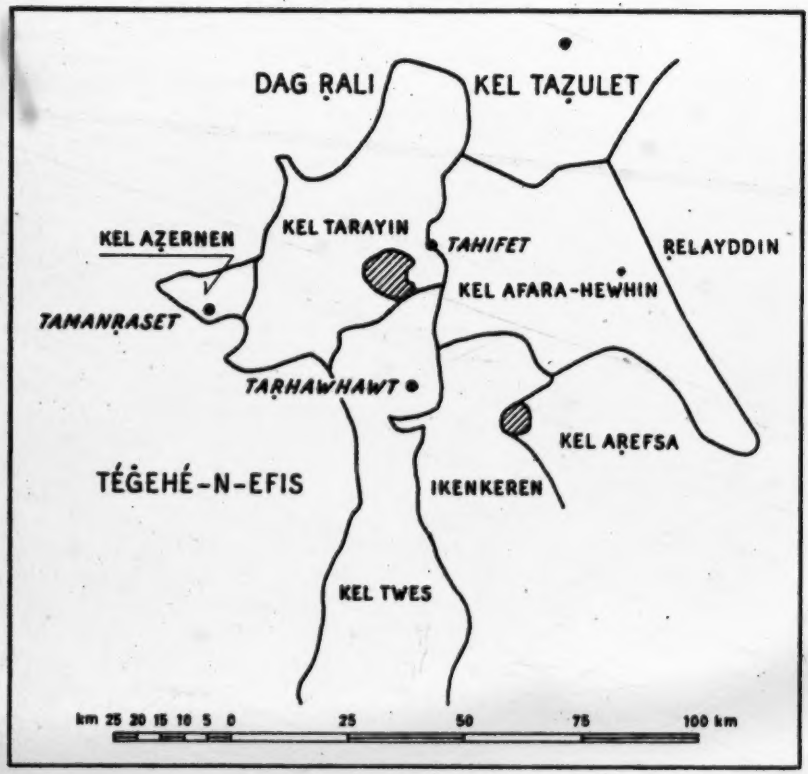

Fig. 104. Map showing the sub-areas of the territory of the *Aġuh-en-tehlé* tribe. The sub-areas have no proper limits towards the south where the country changes into barren and uninhabited desert. The hatched areas are mountainous regions which are not considered parts of sub-areas. West of the *Aġuh-en-tehlé* territory is the territory of the *Tégehé-n-Efis* tribe where two sections of the *Aġuh-en-tehlé* have their normal grazing grounds. To the north are the territories of the *Dag Ṛali* and the *Kel Taẓulet* tribes. The *Kel Aẓernen* section frequently camps in the *Dag Ṛali* territory and intermarries with the *Kel Tamaṛaset* section of that tribe. To the east is the territory of the *Ṛelayddin* who are now considered part of the *Aġuh-en-tehlé*. The *Aġuh-en-tehlé* territory chiefly belongs to the *Aboda* zone, but the northern parts of the two northernmost sub-areas are within the zones of *Tarayin* and *Asakor*.

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Fig. 106. A small goat-herding camp of three related households. The inmates have not erected their skin tents, but have their luggage and their household utensils hanging upon posts (left). In the hot daytime the people live in the shade of the rock (right). Ahaggar (the *Atakor* zone), the *Dag Ṛali* tribe (the *Kel Tamanṛaset* section).

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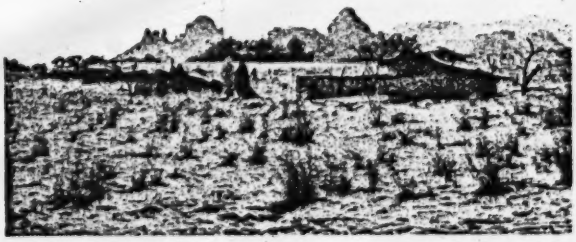

Fig. 107. A camp of four skin tents. Tasilé-n-Ajjer, the *Uraren* tribe.

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Atakor zone. In this area kin groups of five or six generations, comprising about twenty tents, may form a section camp for long periods. Thus I was told that all members of the *Kel Tamanṛaset* section camped together in the same place for eight months of the year 1952. Among the Tuareg, who have their grazing grounds mainly in the *Abada* country, section camps are not so easily formed as annual pasture springs up less frequently. People of such tribes as the *Iklan-en-tawsit*, the *Tégehé-n-Efis*, and part of the *Aguh-en-tehlé* tribe, generally live in goat-camps, which are often smaller than those of the

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Dag Ṛali tribe of the *Atakor* region. Where goats feed mainly on acacias it is not possible to keep such large flocks together as when grazing consists of fresh or dry annual plants. Acacia leaves are very important for fodder and their fruit-pods are still more valuable, but the trees grow scattered and consequently fodder is not so concentrated. We see again how stock-breeding among the Ahaggar Tuareg is an industry adapted to environment. The size of camps is determined by natural conditions.

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Fig. 108. A camp of two related goat-herding units with their straw-huts (*ikebran*, of the cylindrical type) placed at a certain distance from each other in order that the two flocks shall not mix. Tasilé-n-Ajjer, the *Kel Uhet* tribe (*Isekkemaren*).

the head, and half the meat (Lhote 1955a, p. 284), but for certain hunting grounds there are different rules (cf. list p. 148).

(4) The tenants have the right to dues from the crops of every garden in their sub-areas, but for sub-areas of the *Dag Rali* tribe these payments are now given to the *Amenukal* because, it is said, the *Dag Rali* Tuareg consider such dues incompatible with Islamic law. In the *Aguh-en-tehlé* tribe the tenants receive 10 kg per garden from a crop of wheat and barley (grown in winter), 10 kg from a crop of millet (grown in summer), and 4 kg from a crop of tomatoes.

Should the rights of tenants be violated, the offenders will be fined by the *Amenukal*, the indemnity falling to him and not to the tenant. In the past there was a fixed indemnity of three goats for the violation of protected pastures. Nowadays the price is determined by the *Amenukal*. When a tenant dies his rights and obligations should preferably be taken over by a maternal kinsman. Traditionally the usufructs of a sub-area are reserved to people of the same section as the tenant, but should the tenant be identical with the chief of the whole tribe they belong to all tribal members. These traditional rules, however, do not seem to be observed very strictly nowadays except for the hunting of barbary sheep in certain areas. Lhote seems to be wrong in stating that the chief of the tribe has the right to forbid grazing and protect pastures in the whole tribal territory (Lhote 1955a, p. 279). In the two tribes here described this right is invariably vested in the tenants of sub-areas.

AYR

The Ayr Tuareg follow the Islamic rules of inheritance described from Ahaggar p. 137 f., and property marks as in Ahaggar are patrilineally inherited in the way that people take over their father's mark. However, property marks play a less important role in Ayr, where the Tuareg with the exception of the *Igdalen* Tuareg (vassals) do not mark goats, sheep, and cattle. Other tribes of Ayr mark only camels and donkeys, and branding with a redhot iron as well as earmarks cut with a knife are used for these animals. Both types of marks are known as *éjwel*. Some Ayr Tuareg and all Tuareg of the *Kel Geres* group use brands for camels and donkeys, and this seems also to be the case with the *Iwllemmeden Kel Dennek*. Some of the brands used among the *Kel Ayr* are published by Rodd and Nicolas (Rodd 1926a, pl. 21 p. 195; Nicolas 1950a, p. 268 f.). The earmarks used for camels and

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

Fig. 117. Fishing pool (*agelmam*) in Tasilé-n-Ajjer.

sunset. There are wild pigeons by the thousand and innumerable flocks of guinea fowls and partridges (*Alectoris* sp.). Two species of turtle-dove are almost as common in Ayr as is the sparrow in Europe. Possibilities of hunting are much more favourable in Ayr than in Northern Tuareg countries, yet, nevertheless, the Ayr Tuareg engage even less in hunting than do the Ahaggar Tuareg. One reason for this is perhaps that very few Ayr Tuareg possess guns. It is extremely rare to meet hunters in Ayr. They are found mainly within one tribe, namely that of *Imedderaren* (or *Kel Tamgak*) living in the Tamgak Mountains of Northern Ayr. I have myself never visited camps of these people, but all Tuareg agree that they live largely as hunters and possess few domestic animals. Unfortunately, these people have never been studied in detail. Buchanan, who met a hunting band of these Tuareg in 1920, says that they have neither goats nor grain, but live by hunting and the collection of wild edible plants (Buchanan 1921, p. 191), while Campbell, who met them at Iferwan in 1926, describes them as hunters who also breed goats and sheep (Campbell 1928, p. 204 f.). Rodd also states that the *Kel Tamgak* have goats and sheep, but that they do not possess camels (Rodd 1926a, p. 307). This is in agreement with information gathered by myself at Iferwan where I met a few Tuareg of this group. There are no Ayr Tuareg who live exclusively by hunting and collecting. The number of game animals killed

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

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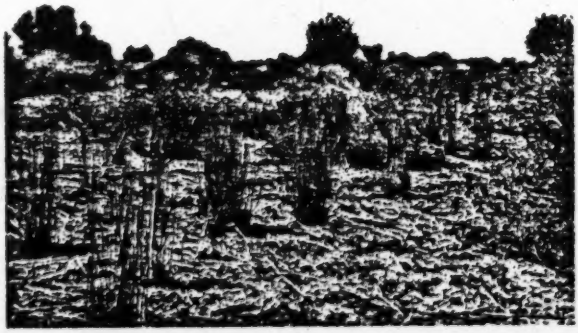

Fig. 128. Harvested wheat-plot grown without artificial irrigation along a river valley. Tasilé-n-Ajjer.

PRIMITIVE CORN GROWING

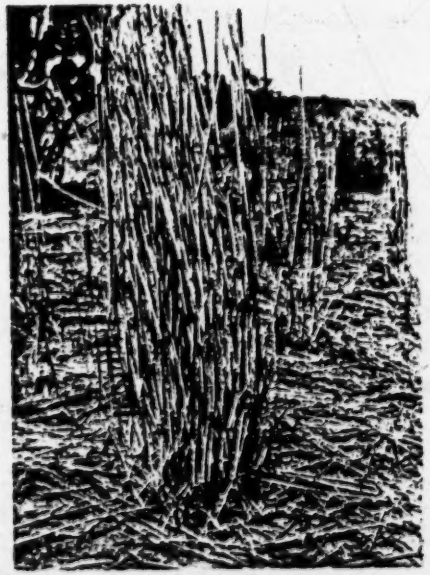

Fig. 129. A close-up of a tuft of harvested wheat from the plot illustrated above (Fig. 128). Tasilé-n-Ajjer.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

Fig. 130. Semi-wild date palms in the canyon-like Aharhar valley of Tasilé-n-Ajjer. The palms are owned and harvested by pastoral Tuareg.

(Aharhar and Éherir) where "semi-wild" palms are abundant. These palms are owned by pastoral Tuareg of various tribes. Their dates are harvested in the autumn when Tuareg palm owners with their slaves live in straw-huts or huts covered with palm leaves situated among the palm trees.

Similar plantations of palm trees which are left to themselves most of the year are also found in Ahaggar, notably at Silet-Tiheghin. Part of these palms are owned by members of the *Dag Rali* tribe (the sections of *Kel Tamanrasset* and *Kel Terhenanet*) and by members of the very small tribe, the *Ikechchemaden*. The palm-owners give as an annual payment to the *Amenukal* of Ahaggar one bunch of dates from all palms which have more than two bunches. The yield of another part of the palms belongs to the vassal tribe *Iklan-en-tawsit* (the sections *Kel Silet* and *Kel Tahalra*). For usufructs, members of these two sections make a collective annual payments to the *Amenukal* comprising four bags of dates, twenty goats, two ropes of goat's hair, and five water bags. The dates are harvested by Tuareg of the above mentioned tribes in August-September. Harvesting is done with sickles and is finished in three to four weeks when the palm-owners return to their camps with dates packed in bags and loaded on donkeys and camels. In harvesting their dates most Tuareg are assisted by black-skinned agriculturists (*Harratin*, or *Izeggaren*) of Abalessa who are given a certain amount of dates for their work. These agriculturists build the huts in which the palm-owners live during harvest (cf. p. 338 f.).

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Fig. 131. A *foggara* canal (*tiɛli*) dug into the sandy river bed from where it is led into the gardens of the valley terrace. Southern Ahaggar, *Taɣnut*.

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In Ayr there are also a few pastoral Tuareg who own date palms growing in river valleys, e.g., people of the *Imezzureg* tribe of the *Kel Ferwan* drum-group. These date palms, like those growing half wild in Northern Tuareg countries, yield very small dates of a quality inferior to those grown in the oases under constant supervision by agriculturists. Such dates are used only for local consumption.

IRRIGATION AGRICULTURE IN AHAGGAR

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Irrigation agriculture has been practised since ancient times within certain territories now inhabited by the Northern Tuareg. As early as in Roman times there is reference to *Radames*, *Rat*, and certain oases of the Fezzan, which were visited by Roman Expeditions (Lhote 1955a, p. 113 f.; Duveyrier 1864, p. 249 ff., 266 ff., 275 ff., 455 ff.). Lhote thinks that the oasis of Abalessa in the lowland west of the Ahaggar Massif was also visited by the Roman general Cornelius Balbus (Lhote 1955a, p. 88 f., 113 f., 286), but this, perhaps, is to be doubted. In the writings of Medieval Arab authors there is apparently no reference to oases within the Ahaggar country, though oases in neighbouring parts of the Sahara are mentioned.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

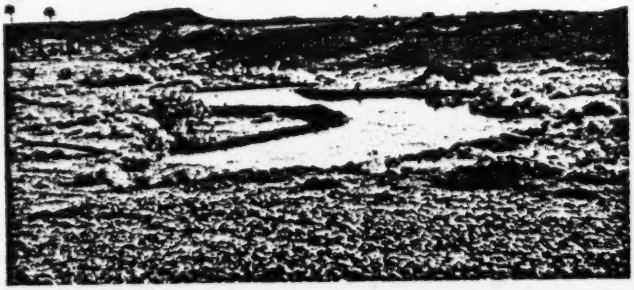

Fig. 133. The large water basin (*ilhemi*) from which water is led into the gardens. Ahaggar, Abalessa.

(*teğuhamt*, or *tahaft*) from which another canal (*tahaft*, or *teğuhamt*) leads water out into the garden, which is always divided into a large number of garden beds (*igemmunen*, sing. *agemmun*) surrounded by low ridges and separated by narrow irrigation canals. The large water basin serves to regulate watering, which outside of the very cold season is done during the night. A flat stone with a hole in its middle and known as *anefif* is placed between the basin and the canal leading water into the garden; water for irrigating the garden flows through this hole when irrigation is needed at night, while the hole is closed by means of a cotton stopper during the day. The basin is thus filled with water during the day and its water runs into the garden at night (cf. Figs. 131–136).

The irrigation systems described are most important for the cultivation of the winter crops of wheat and barley. The Tuareg word in Ahaggar for wheat is *éred* which is a collective name for several types of wheat known as *elkhamra*, *elmansuri*, *amekkawi*, *ɣati*, and *menga*. These special names seem to be derived from Arabic (cf. Foucauld 1951–52, III, p. 1058, 1211 & IV, p. 1789; Maire 1933, I, p. 246). According to Maire these types of wheat belong to the species *Triticum aestivum*. I have never myself seen fully-grown wheat in Ahaggar and was thus unable to collect ears for identification by botanists, but seeds brought home from Ahaggar and Tasilé-n-Ajjer have been identified by Dr. Hans Helbaek as belonging to common bread wheat. Barley is known to the Tuareg as *timžin*. Threshed seeds brought home from Ahaggar have been identified by Dr. Helbaek as belonging to the six-rowed type (*Hordeum vulgare*, though some, he thinks are perhaps of the two-rowed type (*H. distichum*). Barley, like wheat, is a winter crop though less common. At Abalessa I was told that two thirds of the seed-crops grown in winter were wheat, while only one third was barley.

Wheat and barley are grown in the same way. Sowing is done in the autumn (*tober*), and the seeds are put into the garden beds with the fingers. Harvesting takes place in the month of April (*ibri*) and is performed with a sickle (Fig. 143). The growing of wheat and barley is a very strenuous task for irrigation agriculturists. Watering is done for the first time immediately after sowing. When I stayed at Abalessa, in the month of January 1955, the tender plants of wheat and barley were watered two days in succession, and the 10–12 gardens belonging to the same *foggara* were irrigated in succession in this way. At that time of the year the plots are not generally watered at night because of the cold temperatures which may be below zero.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

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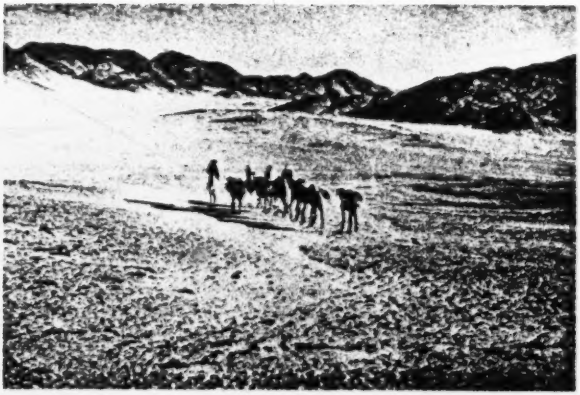

Fig. 147. Tuareg caravan in the barren desert between Ahnet and Ahaggar. The *Kel Ahnet* tribe.

TUAREG CARAVANS

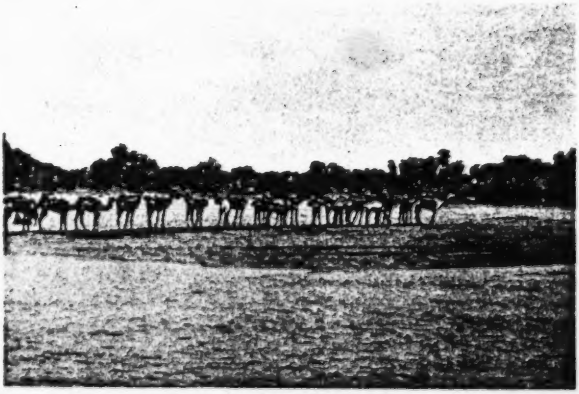

Fig. 148. Caravan crossing the flooded river bed of Oued Dabaga in Southern Ayr. *Kel Ewey* Tuareg.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

tions have remained important to the Ahaggar Tuareg, and it is clear that they would not go on trading were these expeditions not profitable, for trading expeditions are extremely strenuous. Though the expeditions set off when the extreme heat is decreasing, it is still very hot in the extensive barren plains in autumn and in winter during daytime. Water and pasture are often extremely scarce in this deserted country, and the Tuareg frequently have to travel rapidly. For days or weeks they live so to say on their camels, and if camels are not too heavily loaded they may do up to 16 hours a day for several days in succession. Under such journeys the Tuareg eat only once a day. Obviously such trading expeditions are also very hard on the pack-camels, and there is always a risk of loosing a camel during such journeys through barren, desert country.

In this brief outline of caravan trading I have not considered those Ahaggar Tuareg living constantly in the Tamesna plains and adjacent regions. These Tuareg own more livestock than the Tuareg of the Ahaggar Massif, and I do not believe that they engage so much in extensive trading expeditions. They are comparatively rich in she-camels which are tolerably good milk yielders in these regions most of the year, and milk is more important as food than it is in Ahaggar. I believe that most Ahaggar Tuareg of the Tamesna region acquire their necessary vegetable products by selling surplus livestock, butter and cheese at the markets of Ingal and Agadez.

CARAVAN TRADING OF THE AYR TUAREG

Among the Ayr Tuareg stock-breeding products are far more important for food than in the north. Grazing conditions are better with annual pasture as a recurrent event, and the Tuareg keep bigger flocks of goats and sheep, larger camel herds, and most have a few zebus which are guarded without much difficulty. The *Kel Ferwan* Tuareg of Southern Ayr can live on milk for a large part of the year, though they, like those of Ahaggar, become tired of milk drinking if they get no solid food. There are Tuareg of Southern Ayr who live exclusively on milk for two or three months during the periods of *akasa* and *rarat* and to whom milk is important as food for at least six months. In the extremely hot season of *ewilen* when milk is very scarce most Tuareg eat millet porridge with a little milk or sauce (cf. p. 242 f.), and Tuareg who are not very wealthy eat millet porridge to a great extent all the year round, so that the necessary amount of millet for many camps is about 0.5 kilo a day per person, or about 180 kilos a year. In Ayr there are fairly good possibilities of collecting if there are not too many locusts, but most Tuareg do not collect a great quantity of wild seeds, and claim that they would be very badly off without millet, as seeds of wild plants are not very nourishing in comparison. In one year during the second world war (in 1943) they say that millet was very hard to get; it was then very difficult to subsist and a great many animals had to be killed for food. Millet is almost indispensable to the Tuareg; they also consume other vegetables derived from agriculture, notably wheat, maize, and dates, but millet is the most essential non-nomadic food product. Normally it can be acquired by most Ayr Tuareg without much difficulty.

The people of Ayr obtain their provisions of millet from the Sudanese area of shifting cultivation, notably from Damergu (Tanut). Millet can also be bought at Agadez whereto it is brought by Tuareg

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

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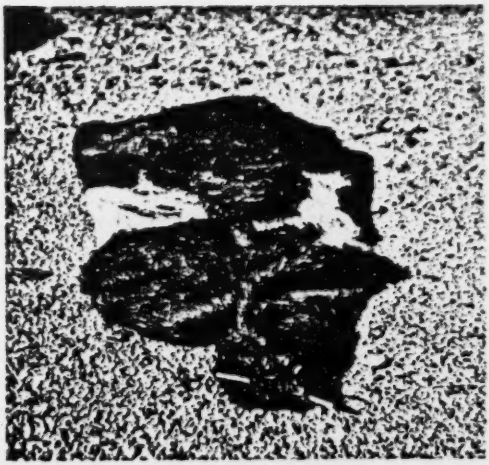

Fig. 215a. The bag to be prepared is filled with a mixture of water and *tiket* (bark) and is placed in the sun. The openings are provisionally closed by sewing with straw.

Preparation of a water bag (*abayor*).

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Fig. 215b. The tanned water bag is suspended for drying. Ahaggar, the *Dag Ilali* tribe.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

The Erection of a Mat Tent in Ayr.

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[352]

Fig. 265d. The narrow ends of the pieces of longitudinal semiarches are lashed together. The tent structure is now finished to be covered with mats. The interior cover consisting of two rectangular mats made from plant stems and known as *iwerweren* (sing. *ăwerwer*) is seen on this photograph.

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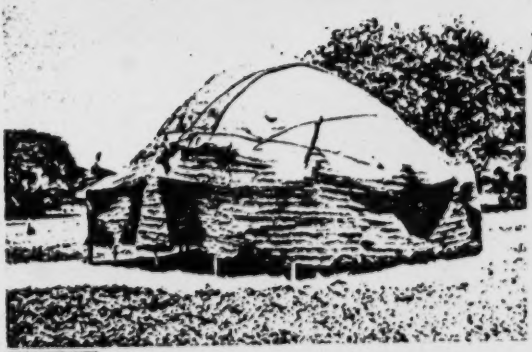

Fig. 265e. The dum palm mats of oval shape (*ixfal*) and the long narrow dum palm mats (*asakemamas*) are placed over the *iwerweren* mats and are tied to the dome-shaped structure with cords. The narrow dum palm mat (*ăyeli*) surrounding the lower part of the tent is fixed to the structure.

[133]

Fig. 265f. The mat tent is taken down for erection in a new place. The woman standing within the structure is loosening the looped cord which keeps the semi-arches to the high middle arch. It is not the same tent as that depicted Fig. 265a–e but the two tents belong to the same camp of the *Imezzureg* tribe near Agadez in Southern Ayr.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25
Songhai MS20

Fig. 266. Three mat tents, three heavy wooden beds, and the household utensils belonging to three households are moved by means of six donkeys. Ayr, the *Imezzureg* tribe.

from the north from very ancient times (cf. p. 412), and, according to Rouch, we find that mat-covered barrel-vaulted huts do not constitute the traditional type of dwelling of all Sonray, but are found along the Niger between Timbuktu and Asongo, while the Sonray living outside of this area have other dwelling types (cf. Rouch 1954, p. 31). Thus we see that Sonray mat-covered arched dwellings are found precisely within the area which has been most strongly influenced by Tuareg culture, namely the upper part of the Niger Bend. It can be added that such dwellings do not seem to be typical of other African peoples who lead a predominantly sedentary life. Furthermore, Sonray mat-covered barrel-vaulted dwellings are built by the women, who are also the true owners of the huts (cf. Rouch 1954, p. 31). In this we find another parallel to traditional Tuareg custom.

We see again how wrong it is to speak of the Ayr Tuareg mat tent as a dwelling particular to the *Kel Ewey*, for such mat-covered tents are used by most Ayr Tuareg from the northern outskirts of the Massif to Damergu; it is said to be used exclusively by the *Kel Geres*; it is known among certain *Kel Dennek*, among the *Iwllemmeden Kel Ataram* and their *Bélla*, and apparently even in the southernmost parts of the *Kel Aḍraɣ* country. Arched mat tents on the southern outskirts of the very vast area inhabited by Tuareg occur in an almost unbroken line in a huge semicircle running from Northern Ayr to Timbuktu.

This distribution may perhaps indicate that the mat tent is of very ancient standing among the Tuareg. We have mentioned above that the mat-covered arched dwellings of the Sonray may have been adopted by these people through contact with the Tuareg, and it does not seem as if the latter adopted their arched mat tents as a result of contact with other Sudanese peoples who use barrel-vaulted dwellings. Barrel-vaulted dwellings are not common in the Western Sudan, but are found among certain pastoralists whose arched huts and tents are structurally very different from the barrel-vaulted Tuareg mat tent. This appears from literature about the *Fulani* and the *Toucouleurs* (cf. Urvoy

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

*342 281 shape. In Southern Tuareg groups the skin tents also vary much in size, but they tend to be larger. Thus it is stated by Nicolas that skin tents among the *Kel Dennek* measure up to one hundred square metres (Nicolas 1938, p. 54), and Lhote says that 80–150 skins are used for sheets of the very large tents of the *Tengerregif* Tuareg (Lhote 1947a, p. 100).

[809] The Tuareg themselves do not refer to the size of a tent by counting the number of skins, or by measuring. The size of a tent is indicated by reference to the number of skin rows in the longitudinal direction of the sheet, and these rows of skin are known to the Ahaggar Tuareg as *taṛda* (cf. Foucauld 1951–52, I, p. 247 ff.). I have myself seen extremely small tents having a sheet of only three *taṛda*, but a tent of normal size will generally have four or five such skin rows, and some even have six or [462] seven *taṛda*. Among the Northern Tuareg the sheet is manufactured in Tuareg camps by pastoral [562] women and their female slaves. Among the *Kel Dennek*, tent sheets are manufactured by women of [564] the blacksmith caste (cf. Nicolas 1950a, p. 155).

*342 285 A mat to be drawn around the lower part of the dwelling constitutes a very essential part of Tuareg skin tents. This mat is generally made from the stems of *afezu* (*afezu*) grass (*Panicum turgidum*) tied together with leather strips as already described. A tent mat at times is divided into two halves which are rolled up and placed at each of the narrow ends of the tent during hot weather so that currents [351] of air may pass through. When weather is cold and also when storms are raging, the Tuareg close their tents with these mats, which may also be drawn out to form a kind of low courtyard in front of the tent (cf. Figs. 267–269). The straw mat made from *afezu* stems tied to one another is known as *éseber* (pl. *isebran*) both among the Northern Tuareg and in Ayr, while the name of a tent mat among the *Kel Dennek* is *šiteḳ* (cf. Nicolas 1950a, p. 154), or *chiteḳ* according to our transcription system. Among the Northern Tuareg, tent mats are generally about one metre high, while varying much as to length. These mats very frequently serve as a kind of wind-screen leaning against poles,

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Fig. 267. Skin tent seen from the back. The shape of the sheet is most irregular. Ahaggar, the *Aǧuh-en-irkli* tribe.

[text continues on p. 364]

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

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Fig. 269a–b. Skin tent of the B.2.f.3 type. The tent is surrounded by an *afezu* mat (*fisher*) and a stone wall (*amatey*) to protect the inmates against the cold winter winds. Ahaggar (the *Asakor* zone), the *Afuh-en-tehlé* tribe.

*342 the tent are called *igemawen*; but the frontal poles are also known by more particular names according to their position (*maday*, *igam*, *aserriri*). The terms mentioned by Nicolas in his 1938-study are largely those used in Ahaggar for similar poles (cf. Nicolas 1938, p. 54 ff. & 1950a, p. 153 ff., pl. VIII). It would appear that a somewhat related pole-system is used for suspension of the skin sheet among the *Iwllemmeden Kel Asaram* where very elaborately carved poles are found (cf. Lhote 1947a, p. 82 ff.), while among the *Tengerregif* Tuareg further west a large number of high unfashioned boughs or sticks are used to suspend the tent (cf. Lhote 1947, illustrations p. 128 f.). As to the Ayr Tuareg, I have never seen properly suspended skin sheets among them, and the *Kel Ferwan* Tuareg did not know any names for such pole systems. It would seem as if most Tuareg who live in skin tents use an almost identical system of poles to which they fasten the sheet. The sheet is never fastened to the

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

*342 Tuareg groups, perhaps in all. They occur in the two groups of Northern Tuareg, but are rare in and around the Ahaggar Massif, though apparently more common among the Ahaggar Tuareg who live in Tamesna. They are also known among the *Kel Adrar* (cf. Cortier 1908, p. 327 f.), and they constitute the common tent among the *Kel Dennek*. On the other hand these tents seem to be rare in and south of the Ayr Massif, where most people have mat tents, and though certain illustrations in literature seem to point to the existence of central T-shaped posts in the tents of the *Iwllemmeden Kel Ataram* nothing seems to have been written about the existence of T-shaped posts there. However, in the ethnographical museum of Neuchâtel there is a short cross-bar of a T-shaped post brought from Tuareg living at Gao (cf. p. 382), and I was told by the chief *Amdey* of the noble *Kel Tahabanat* tribe that T-shaped posts once existed among them but were not used nowadays.

It is most likely that all T-shaped structures are historically related, and the question is taken up later in this chapter. The sub-types to be described are the following:—

B.2.g.1. This type has no other elements to support the sheet but the T-shaped post. Such tents have been depicted by Olufsen and Moberg from Ahaggar (Olufsen 1924a, p. 132 f.; Moberg 1927, p. 212, 229, 257) from which region it is also mentioned by Benhazera (cf. Benhazera 1908, p. 25) and by Foucauld (cf. Foucauld 1951–52, I, p. 247 ff.). I have never seen a skin tent thus erected in or around the Ahaggar Massif, and I have only seen a tent of this kind once in a camp of Ahaggar Tuareg close to Ingal in the extreme south. Foucauld mentions this type of tent as a traditional one to the Ahaggar Tuareg, stating that the central post is always very high. It may attain a height of 2.50 metres and it is always possible for adult men to stand upright in the middle of the tent. It is evident that a tent erected in this way must be firmly attached to poles around it, and the twelve poles traditionally belonging to a skin tent in Ahaggar must necessarily be used in tents which are only supported by a T-shaped post under the sheet (cf. Foucauld 1951–52, I, p. 247 ff.). A tent erected in this way has very much the shape of an umbrella or parasol, and it has the same functions. When it rains the water

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Fig. 279. Skin tent of the B.2.f.3 type. Ahaggar, the *Dag Ralt* tribe.

7:Nicolaisen E-5 (1951-1962) 1963 MS25 Tuareg MS25

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Fig. 290. Sun-shade built of branches and grass. It is the normal living quarters for slaves in Ahaggar and for a great part of the year it is more suitable to the climate than Tuareg skin tents. Ahaggar, the *Dag Rali* tribe.

567 646 [162] military administrators have tacitly admitted that slavery continues as an established institution. According to a census of 1949, there are in Ahaggar 1552 slaves owned by 3960 pastoral Tuareg (cf. Lhote 1955a, p. 224 ff.), and in two tribes the number of slaves exceeds that of fair-skinned Tuareg, namely in the *Dag Rali* and in the *Kel Rela*. Most Ahaggar Tuareg have a few slaves in their camps, while in Ayr very few fair-skinned pastoralists have slaves nowadays. The civil administration of Ayr has done much to secure the abolishment of slavery, and it seems as if many slaves were manumitted after the 1917 revolt. Slavery is actually almost devoid of economic importance in Ayr, while in Ahaggar it plays a great part in the maintenance of the economic system based upon camel-breeding outside Ahaggar and on caravan-trading.

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The structural position of slavery is apparently very much the same in Ahaggar and in Ayr. Slaves are their owners' property; they can no longer be traded, but even in pre-European days it was never usual to sell slaves from one's own camp. The slaves are still inherited within one and the same family, and until a few years ago it was the custom for a slave girl to form part of the bride-wealth. Despite everything this may perhaps be taken as an indication that slaves are not conspicuously well treated, and there are also examples of the corporal punishment of slaves. This may occur even to-day, the rule being that certain misdemeanours, for which the light-skinned Tuareg atone by paying a fine of domestic animals, may be punished in the case of slaves by a flogging on the order of senior chiefs.